

Manufacturers Record

Industry Construction

U. S. Pat. Office



Baltimore, Md.
JUNE 11, 1931

Blue Book of Southern Progress

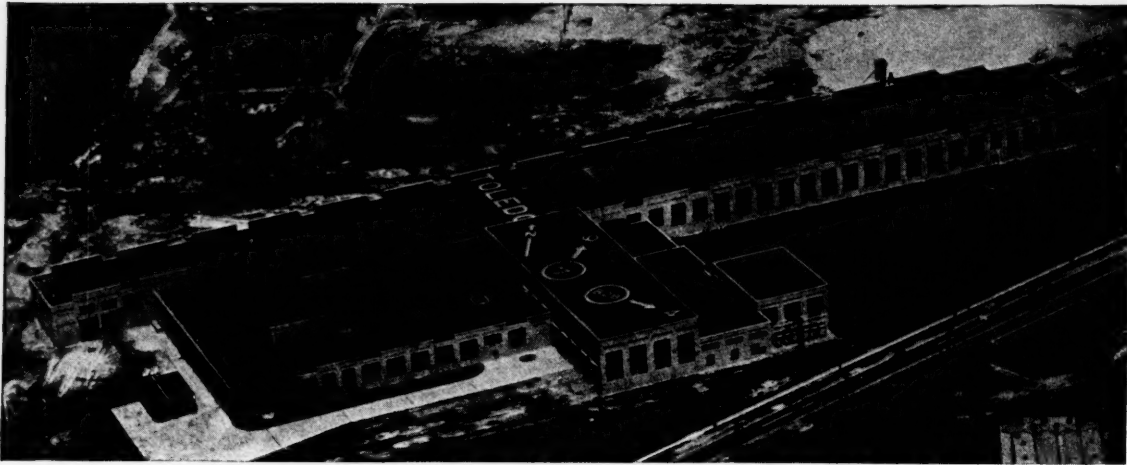
The 1931 edition of the Blue Book of Southern Progress is now available for distribution. In these annual summaries are presented the major factors dealing with industry and business which form the foundation of Southern development. They are based on information assembled by the Manufacturers Record in its weekly review of the business South and from production statistics issued by various branches of the government.

The figures presented are the latest now available by states and industries for the purpose of comparing present activity in the South with its accomplishment of former years, and with the United States as a whole. The comparisons are not made with any thought of minimizing the development of other sections, but to emphasize the South's place in the nation's industry and trade and its progress over a term of years.

In the introductory article are presented salient features illustrating the economic trend of the year 1930, which is followed by a general division of the book's contents into 12 main topics—area and population, agriculture, manufacturing, mining, power development, construction, transportation, foreign trade, banking, insurance, education and wealth. Each industry, as far as possible, is statistically summarized and the whole summed up in the tables showing the economic progress of the United States, the South and each Southern State since 1900.

Each succeeding issue of the Blue Book of Southern Progress, while retaining basic statistics of the South's resources and productive power, covers different phases of Southern activity that have attained prominence or that indicate a change in trend during the year. These facts, assembled for their relation to and direct bearing upon the development of the United States, are published in a concise form to serve the busy executive and make available a ready reference book for the student and for others seeking information about the Southern States. The Blue Book of Southern Progress has become the standard authority on the material resources and development of the 16 states from Maryland to Texas. It is so recognized by business men, educators and students.

Appreciating the educational value of these annual publications in making known the South's resources and the extent of its business activity, many Southern concerns buy the books in quantity lots for distribution among their clientele and to prospective developers and settlers in the Southern States. The price for single copies of the Blue Book of Southern Progress and for bulk orders of less than 500 copies is 50 cents a copy; 500 copies or more, 40 cents per copy and 1,000 copies or more, 30 cents per copy.



Libby-Owens-Ford Glass Co., Toledo, Ohio. This entire roof area comprising over 200,000 sq. ft. is covered with Federal precast concrete slabs.

How To Save Money On Your Roof Deck

Select a roof material that does not rust, rot, disintegrate, burn—that costs nothing to maintain—to paint, repair, or replace.

Today especially, the experienced buyer is looking beyond the purchase price—to these unseen *extras* that come with time—that can and should be figured in cost just as definitely as depreciation and maintenance on any other part of the building or its contents.

Featherweight Concrete **INSULATING ROOF SLABS**

are made of *concrete*—permanent, fireproof, and no maintenance; *Haydite* concrete weighing as low as 10 lbs. per sq. ft., that goes on the same light steel frame as other roof materials; guaranteed by over a quarter century of engineering knowledge and experience. In use today by the country's leading industrials, utilities, railroads and public buildings.

Read the complete story in our "Catalog and Roof Standards", sent on request.

Made, Laid and Guaranteed by

FEDERAL-AMERICAN CEMENT TILE CO.

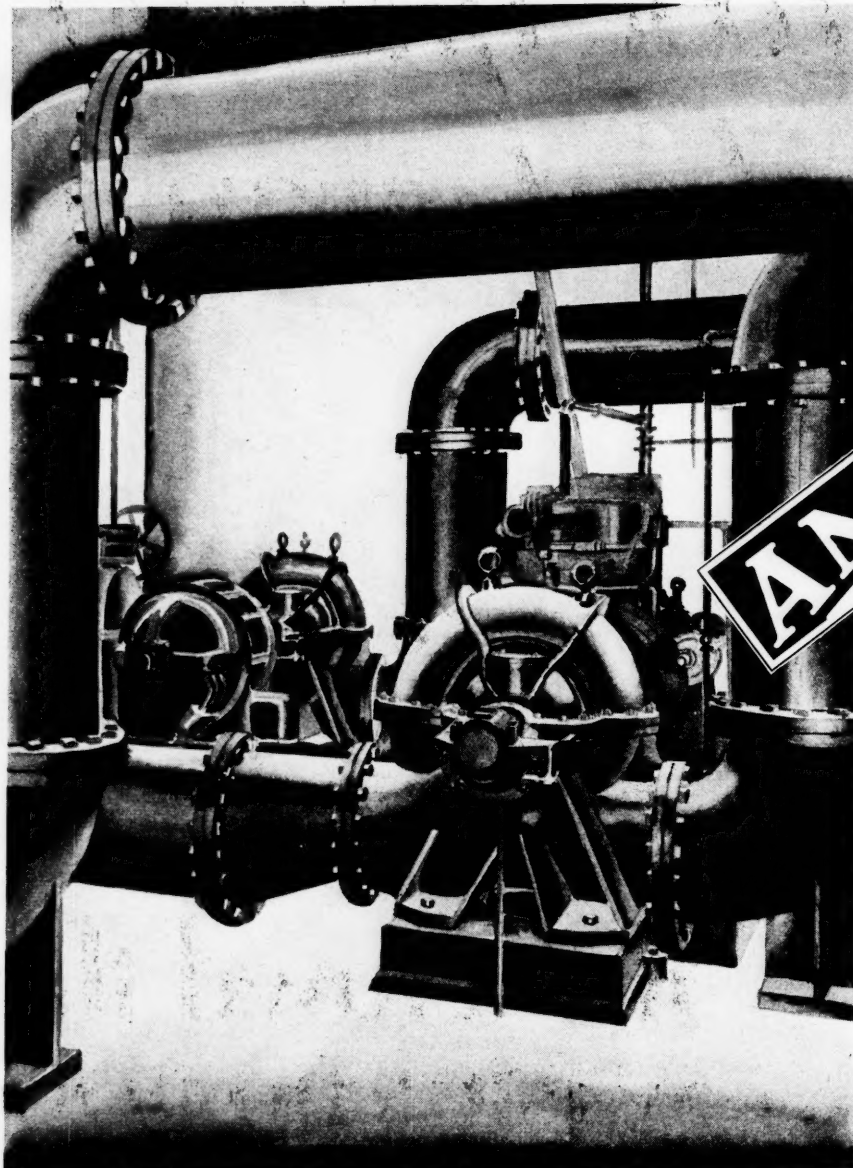
Executive Offices: 608 South Dearborn Street Chicago
Plants near CHICAGO . NEW YORK . PITTSBURGH . BIRMINGHAM
FOR OVER A QUARTER CENTURY



HANDLE
25%
HARDER
DIGGING

Atlanta, Ga.
351 Whitehall
Memphis,
Second at
Dallas,
1221 S. L

NORTHWEST



AMERICAN
AURORA, ILL.

*Showing "American"
Pumps in Sewage
Pumping Station at
New Rochelle,
New York*

'AMERICAN' PUMPS at NEW ROCHELLE

BRANCH OFFICES

CHICAGO, ILL.	20 N. WACKER DRIVE
KANSAS CITY, MO.	COMMERCE BLDG.
LOS ANGELES, CALIF.	416 E. THIRD ST.
NEW YORK, N. Y.	165 BROADWAY

DISTRICT SALES AGENCIES

ATLANTA, GA.	OMAHA, NEB.
BIRMINGHAM, ALA.	PHILADELPHIA, PA.
CAMBRIDGE, MASS.	PORTLAND, OREGON
CHARLOTTE, N. C.	PORTALES, N. MEX.
DALLAS, TEXAS	SALT LAKE CITY, UTAH
DENVER, COLO.	SAN FRANCISCO, CALIF.
DETROIT, MICH.	SEATTLE, WASH.
EL PASO, TEXAS	ST. LOUIS, MO.
HOUSTON, TEXAS	ST. PAUL, MINN.
JOPLIN, MO.	TULSA, OKLA.
MILWAUKEE, WIS.	VANCOUVER, B. C.,
NEW ORLEANS, LA.	CANADA

THREE fifteen-inch large capacity "American" Centrifugal Pumps are in service in the Sewage Pumping Station in New Rochelle. The city depends upon the uninterrupted disposition of its sewage and wastes, to maintain its inhabitants' good health.

Ample pure water — sufficient fire protection — and efficient sewage disposal is a matter of sufficient dependable pumping capacity.

Over a period of a great number of years, "American" Centrifugal Pumps, Sewage Pumps, Deep Well Turbines and Deep Well Plunger Pumps have come to be standard equipment for the day after day reliable service required in municipal pumping.

THE AMERICAN WELL WORKS

General Offices AURORA, ILLINOIS and Factory

If a valve lasts twice as long is it not worth a fraction more?

THE
PERFECT
APPLICATION
OF A
PRINCIPLE

Seldom do you hear of a Nordstrom Valve wearing out. The reason is obvious.

The Nordstrom is lubricated.

Practically all other valves are NOT.

You believe in keeping a good machine lubricated. How long would your lathes last without lubrication? Or your automobile?

We've simply applied the basic idea of lubrication to valves—thereby enabling us to perfect utilization of the plug type to even the largest sizes. Furthermore, new refinements in the processing of cast steel enable us to manufacture high pressure valves for most requirements.

You realize the advantages of the plug type. Now with the application of the "Sealdport" principle, lubricant is uniformly distributed to every part of the plug and contacting surface of the body without creeping into the line. So there is always a film of lubricant, under hydraulic pressure, between plug and body. As long as there is lubrication, friction and abrasion cannot cause destruction. Hence, longer wear, longer life—and vastly cheaper valve cost. So your replacement costs with Nordstroms are but a fraction of what you have been paying in the past.

Many Nordstroms are giving five, ten and more times as much service as unlubricated types. Even double the life makes them the cheapest, in spite of the fact that the initial cost might be a fraction more. Ask for catalog. Also data on "Merco" Pipe Joint Compound.

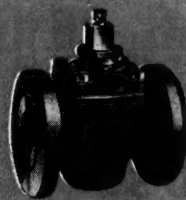
A new type of flanged joint for use with welded pipe lines requiring insertion of valves and fittings for the taking off of outlets. Extremely flexible. Size from 1½" to 10".



Nordstrom Cast Steel Valve. No. 2212, Screwed. Sizes ½-inch to 3-inch, inclusive.



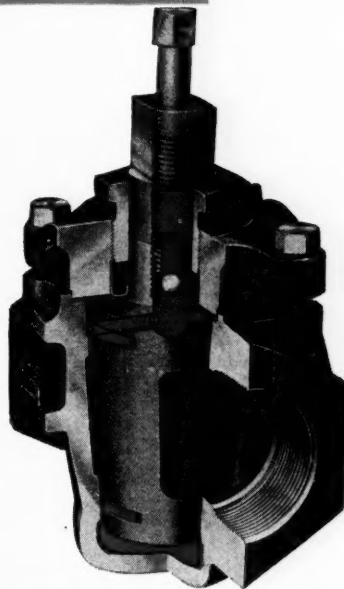
Nordstrom Cast Steel Valve. No. 2012, Screwed. Size 2-inch only.



Nordstrom Cast Steel Valve. No. 2013, Flanged. Sizes 2, 3 and 4-inch only.



Nordstrom Cast Steel "Venturi" Valve. No. 4175, Flanged. Sizes 6-inch to 8-inch, inclusive.



NORDSTROM

VALVES

M E R C O N O R D S T R O M V A L V E C O M P A N Y
SUBSIDIARY OF THE MERRILL COMPANY . . . ENGINEERS

Atlanta - Healey Bldg.
Boston - 250 Stuart St.
Buffalo - 1 W. Genesee St.

Charleston - W. Virginia
Chicago - 178 W. Adams St.
Dallas - Magnolia Bldg.

Detroit - 2842 W. Grand Blvd.
El Paso - 111 So. Virginia St.
Houston - Petroleum Bldg.

Los Angeles - 1709 W. 8th St.
New Orleans - Masonic Bldg.
New York - 11 W. 42nd St.

Pittsburgh - Clark Bldg.
St. Louis - 317 N. Eleventh St.
San Francisco - 343 Sansome St.

Denver - Republic Supply Company, 332 Continental Oil Bldg.
Honolulu - W. A. Ramsay Co., Ltd., Fort & Queen Streets
Philadelphia - Brown, Wilson & Company, 1600 Arch St.

Factory - Oakland, Calif.

Saginaw - Arthur C. Beckert, 112 Durand St.
Salt Lake City - National Equipment Co., 101 West 2nd South St.
Tulsa - B. V. Emery & Company, 216 E. Brady Street

Canada - Peacock Bros., Ltd., Montreal, Toronto, Winnipeg, Vancouver. (Also Sydney, N. S.)
England - Audley Engineering Co., Ltd., Newport, Shropshire.
Buenos Aires, Argentine - General Electric, Soc. Anon., Victoria 618 Esq. Peru.

"WABCO"

Packing Cups

for Pneumatic Devices

Here is a line of composition packing cups suitable for a wide variety of pneumatic devices, including operating valves, power and cushioning cylinders, hoists, chucks, clamps, air springs, etc. . . . They are made of the same composition developed in our own rubber products plant for use in railway air brake cylinders — it having proved under long practical tests to have better mechanical and physical properties than any other commonly-used packing material.

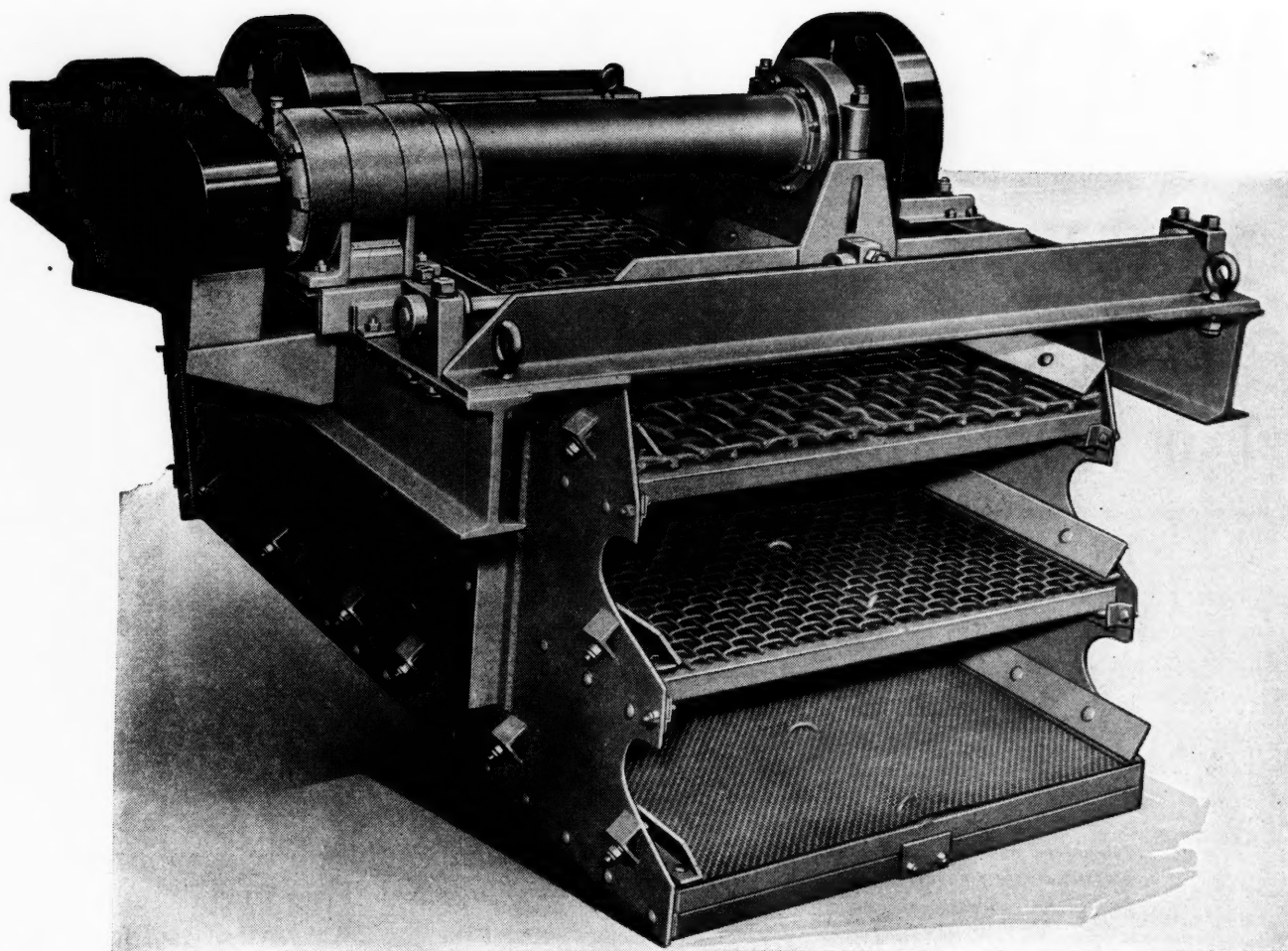
These cups will withstand the action of oil, moisture, and a wide range of temperatures. They are moulded to accurate size and shape, and re-enforced with open mesh cord fabric that is thoroughly imbedded in the composition.

WABCO packing cups are distinctly effective in making and holding an air tight seal.

**WESTINGHOUSE
TRACTION BRAKE CO.**
Industrial Division **PITTSBURGH, PA.**

*WABCO cups are available
in a multitude of sizes, ranging
from 19" to 26" diameter . . .
Perhaps there is one among these
that you can use . . . Send your
drawings and permit us to quote on
your requirements.*





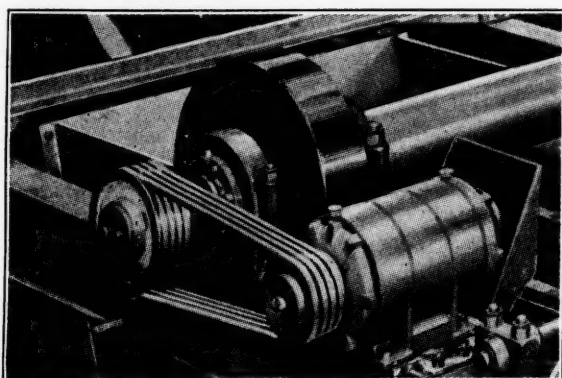
Screen, Motor and Drive *a Complete Unit...Sturdy and Well Built*

When you buy an Allis-Chalmers vibrating screen, either one, two or three deck, you get a unit that needs but to be suspended and it is ready to operate. It is not necessary to buy a motor and drive and then find some place to install them as they are built into the screen at the factory.

The motor, a product of Allis-Chalmers, is of the totally enclosed fan-cooled type, dirt-proof and water-proof. It is so thoroughly protected that you can turn a stream of water on it while it is running and not harm it.

The Texrope Drive, originated by and built by Allis-Chalmers is slipless, vibrationless and flexible. Dirt and water cannot hurt it. It is large enough to carry any overloads that may be demanded of it.

With the screen, motor and drive built by one organization the responsibility for the successful operation of the unit rests on that organization. For further details on Centrifugal Vibrating Screens get in touch with the nearest Allis-Chalmers office, or write for Bulletin 1470-B



Motor and Texrope Drive on an Allis-Chalmers Centrifugal Vibrating Screen

ALLIS-CHALMERS

— Allis-Chalmers Manufacturing Company, Milwaukee —

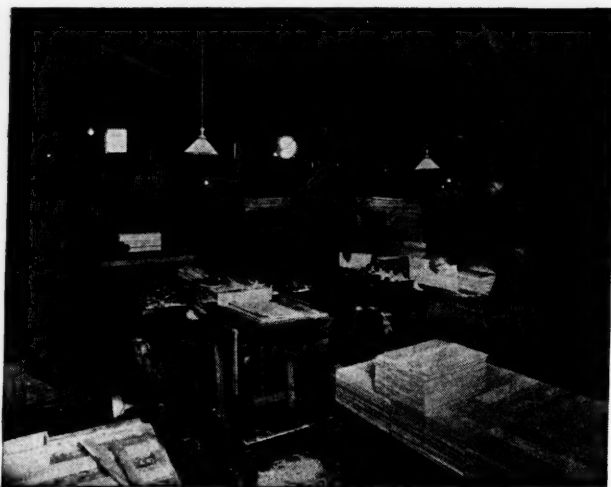
MAY PLAN

MAKES SALES PROFITABLE

[[33 $\frac{1}{3}$ % More Production]]
[[For 10% More Wages]]



The quotations used in this advertisement are from a Gould Report, and they are guaranteed authentic. More detailed reports and data on other installations may be had on request.



The Chapman & Dewey Co., large producers of wood box shooks, cases, ash headings and hardwood products, finds the May Plan decidedly helpful in subnormal period.

W. B. Chapman, V.P., Chapman & Dewey Lumber Co., Memphis, Tenn., says:

"The operation of the May Cost Reduction Plan in our box factory has made our sales profitable in a highly competitive market . . . Due to the general depression, we are producing two-thirds normal capacity—but with one-half usual operating force. In normal production this would mean 33 $\frac{1}{3}$ % increased output . . . Through the May Plan our workmen are enjoying a 10% wage increase. This creates a better satisfied, more efficient class of workmen, and consequently better service to our customers."

GEORGE S. MAY INC.

Cost Reduction

CHICAGO
2600 North Shore Avenue

Sales Analysis

NEW YORK
122 East 42nd Street
CANADA: George S. May, Ltd., 18 Toronto Street, Toronto

Cost Systems

LOS ANGELES
215 West Sixth Street

Appraisals

SEATTLE
710 Second Avenue



Mother and Father *didn't* *miss a word*



From their seats in the last row of the school auditorium would they be able to hear their little girl recite? The parents were pleasantly surprised when her childlike treble came across the distance clear and natural,

brought by Western Electric amplifying apparatus.

Public Address Systems widen the hearing circle. They enable hundreds or many thousands, indoors and out, to hear distinctly every word of a speaker or the pianissimo tone of a musical instrument.

This equipment gives its true-to-life tonal results because it was made by an organization with fifty years' experience in *sound*—the makers of your Bell telephone. It is additional proof—along with apparatus for talking pictures, for broadcasting, for police radio, for aviation communication—of Western Electric leadership in the whole field of sound.

Western Electric

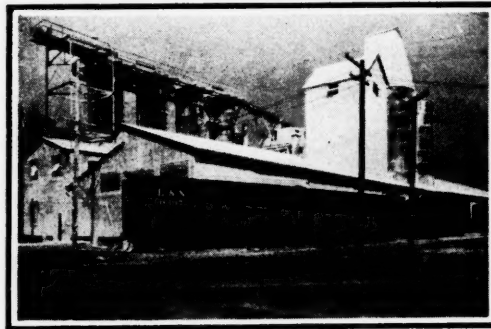
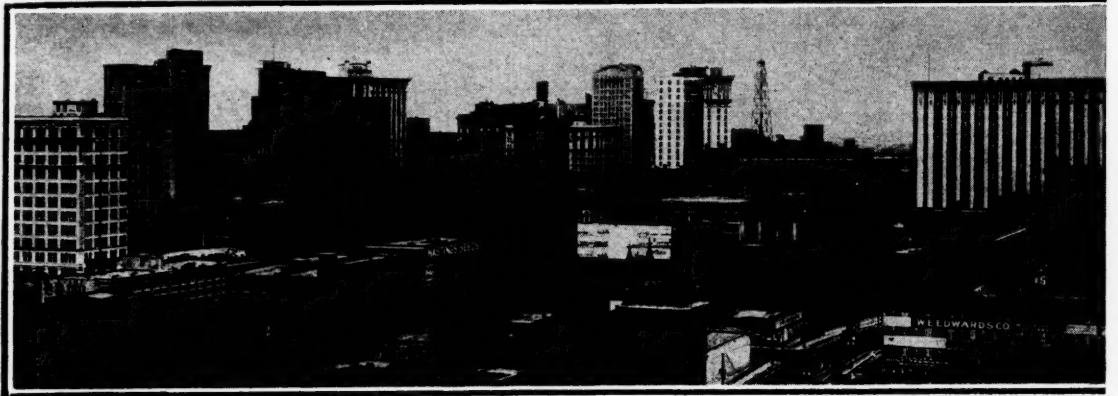
*Makers of your Bell telephone and leaders
in the development of sound transmission*



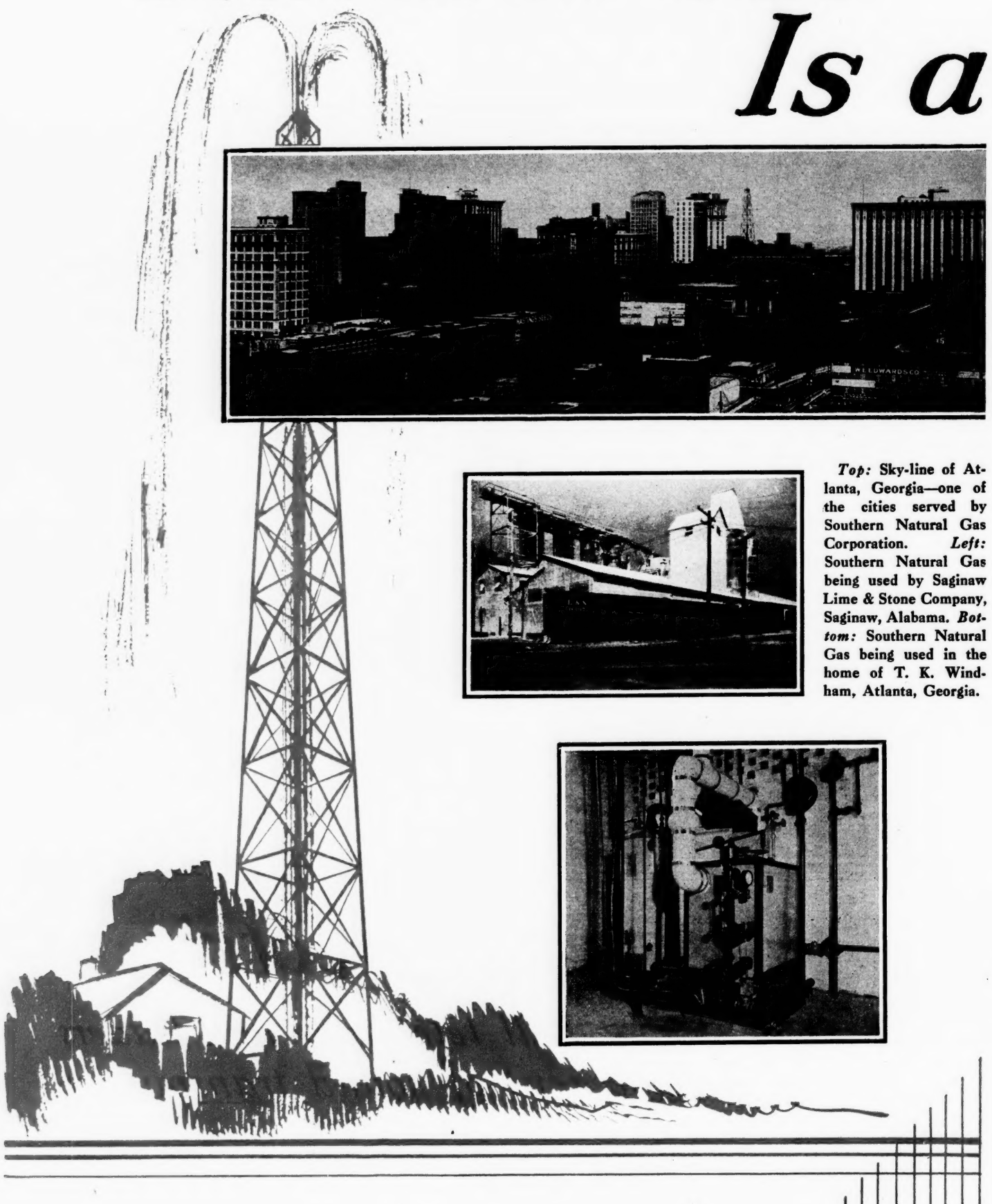
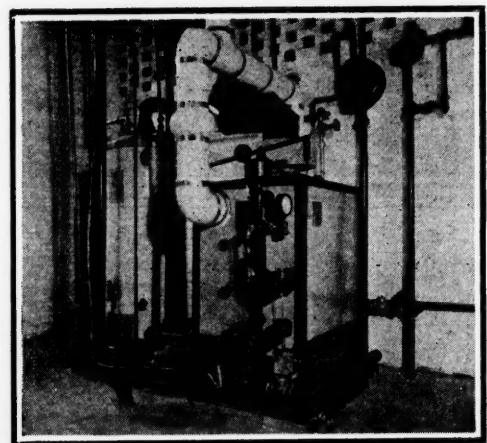
The Western Electric Public Address System is
distributed by Graybar Electric Company.

Natural Gas

Is a



Top: Sky-line of Atlanta, Georgia—one of the cities served by Southern Natural Gas Corporation. **Left:** Southern Natural Gas being used by Saginaw Lime & Stone Company, Saginaw, Alabama. **Bottom:** Southern Natural Gas being used in the home of T. K. Windham, Atlanta, Georgia.



a Public Boon

Natural gas is an aid to industrial progress and prosperity. It is in use in all but eleven states of the Union, including leading cities in

Arkansas
Kansas
Missouri
Oklahoma
Texas

California
Kentucky
New York
Pennsylvania
West Virginia

Colorado
Louisiana
Ohio
Tennessee
Utah

Now natural gas has come to serve people of Mississippi, Alabama, and Georgia . . . a fuel for their homes and industries that is useful, healthful, convenient, economical . . . an improvement over any other fuel they have yet enjoyed. In taking advantage of natural gas, these three states are but following an example that has helped to bring comfort, convenience, and prosperity to millions of people.

The advantages of natural gas in the industry and in the home have been realized. These advantages may be lower fuel costs, lower labor costs, decreased loss in manufacture, improved quality of the product, greater plant production.

As a commodity for public use, natural gas asks no favors, but stands solely on its own merits.

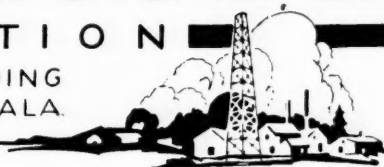
*Write for information on how this modern fuel
can be used in your plant or your home to your
own profit, comfort and convenience.*

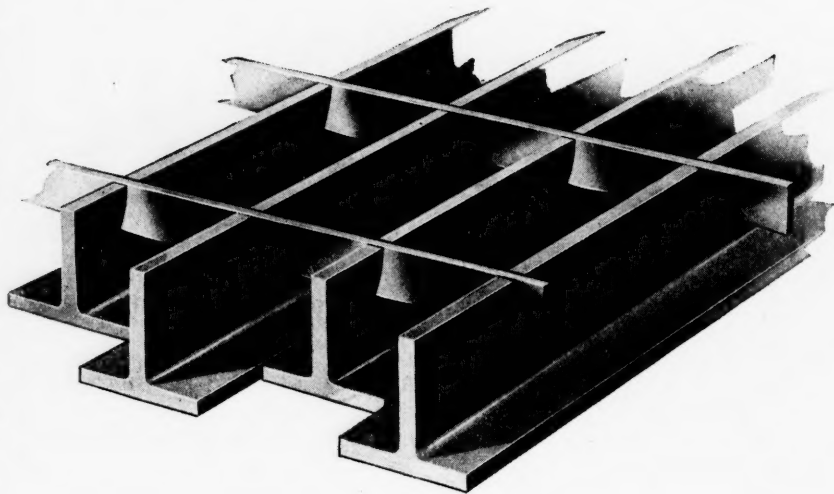


SOUTHERN NATURAL GAS

C O R P O R A T I O N

WATTS BUILDING
BIRMINGHAM ALA.





Announcing

THE MANUFACTURE AND DISTRIBUTION BY
CARNEGIE STEEL COMPANY OF T-TRI-LOK,
FORMERLY MANUFACTURED BY THE TRI-LOK COMPANY



-TRI-LOK

CARNEGIE STEEL COMPANY has acquired the rights from The Tri-Lok Company to sell, manufacture, and distribute T-TRI-LOK, a floor construction involving the use of tees in which interlocking members in the form of flat bars are forced into place under heavy pressure. This construction forms an efficient, economical member suitable for bridge and building floors, railroad crossings or similar forms of construction where self-contained floor slabs are required to support heavy loads.

T-TRI-LOK when filled with concrete is respectively stronger and lighter than any flooring system heretofore devised of equivalent weight and strength. In new construction, the use of T-TRI-LOK materially reduces the dead weight of floor system, stringers and I-Beams, and in old structures makes possible the increase in carrying capacity without increase in total dead weight of the structure.

Installation of T-TRI-LOK is simple, is manufactured and shipped in panels which can be readily anchored to stringers, and with T members in contact, no form work is required to retain concrete fill. T-TRI-LOK forms an armored concrete wearing surface of long life, and with non-skid surfaces.

Carnegie engineers are at your service, and additional data regarding details of construction will be furnished upon request.

CARNEGIE STEEL COMPANY • PITTSBURGH, PA.

Subsidiary of United States Steel Corporation

145

T-TRI-LOK

CLEVELAND'S GREAT BUILDING GROUP TESTIFIES TO YOUNGSTOWN QUALITY



LAKESIDE HOSPITAL GROUP OF WESTERN RESERVE UNIVERSITY, CLEVELAND, OHIO

LAKESIDE HOSPITAL GROUP

Service Building:

Architects: Garfield Stanley-Brown Harris and Robinson.
Engineer: John Paul Jones.
General Contractors: Lundoff Bicknell Co. Plumbing Contractors: W. G. Cornell Co. Heating Contractors: W. B. Van Sickle Co. Electrical Contractors: Hatfield Electric Co. Ventilating Contractors: W. B. Van Sickle Co.

Medical School:

Architects: Coolidge, Shepley, Bulfinch and Abbott, Boston, Mass. Engineers: Heating and Ventilating: Buerkel & Co., Boston, Mass. Plumbing: James A. Cotter Co., Boston, Mass. General Contractors: Lundoff Bicknell Co. Plumbing Contractor: Smith & Oby Co. Heating Contractors: A. R. Brueggeman Co. Electrical Contractors: The Berg Clark Electric Co. Ventilating Contractors: A. R. Brueggeman Co.

Babies' Hospital:

Architects: Garfield Stanley-Brown Harris and Robinson. Engineers: Heating and Ventilating: Buerkel & Co., Boston, Mass. Plumbing: James A. Cotter Co., Boston, Mass. Electrical: Hixon Electric Co. General Contractors: John Gill & Sons. Plumbing Contractors: Smith & Oby Co. Heating Contractors: A. R. Brueggeman Co. Electrical Contractors: Hatfield Electric Co. Ventilating Contractors: A. R. Brueggeman Co.

Maternity Hospital:

Architects: Garfield Stanley-Brown Harris and Robinson. Engineers: Clark MacMullen and Riley. General Contractors: Crowell & Little Constr. Co. Plumbing Contractors: Smith & Oby Co. Heating Contractors: A. R. Brueggeman Co. Electrical Contractors: Hatfield Electric Co. Ventilating Contractors: A. R. Brueggeman Co.

Pathology Building:

Architects: Garfield Stanley-Brown Harris and Robinson. Engineers: Clark MacMullen & Riley. General Contractors:

Crowell & Little Constr. Co. Plumbing Contractors: Smith and Oby Co. Heating Contractors: Smith & Oby Co. Electrical Contractors: Hatfield Electric Co. Ventilating Contractors: Smith & Oby Co.

Lakeside Hospital:

Architects: Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass. Engineers: Heating and Ventilating: Buerkel & Co., Boston, Mass. Plumbing: James A. Cotter Co., Boston, Mass. Electrical: Hixon Elec. Co. General Contractors: John Gill & Sons. Plumbing Contractors: W. G. Cornell Co. Heating Contractors: W. B. Van Sickle Co. Electrical Contractors: Martien Electric Co. Ventilating Contractors: W. B. Van Sickle Co.

Hanna Memorial Building:

Architects: Coolidge, Shepley, Bulfinch and Abbott, Boston, Mass. Engineers: Heating and Ventilating: Buerkel & Co., Boston, Mass. Plumbing: James A. Cotter Co., Boston, Mass. General Contractors: John Gill & Sons. Plumbing Contractors: W. G. Cornell Co. Heating Contractors: W. B. Van Sickle Co. Electrical Contractors: Martien Electric Co. Ventilating Contractors: W. B. Van Sickle Co.

Nurses' Dormitory:

Architects: Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass. Engineers: Heating and Ventilating: Buerkel & Co., Boston, Mass. Plumbing: James A. Cotter Co., Boston, Mass. Electrical: Hixon Elec. Co. General Contractors: John Gill & Sons. Plumbing Contractors: W. G. Cornell Co. Heating Contractors: W. B. Van Sickle Co. Electrical Contractors: Martien Electric Co. Ventilating Contractors: W. B. Van Sickle Co.

Allen Memorial Library:

Architects: Walker & Weeks. Engineers: Heating and Ventilating: Clark MacMullen & Riley. Plumbing: Walker & Weeks. C. H. Loughridge. General Contractors: Reaugh Constr. Co. Plumbing Contractors: Smith & Oby Co. Heating Contractors: Smith & Oby Co. Electrical Contractors: Martien Electric Co. Ventilating Contractors: Smith & Oby Co.

In the impressive Lakeside Hospital group of Western Reserve University, Youngstown products are used in every building. Architects, engineers and contractors on all of these buildings have recognized the superior qualities of Youngstown pipe, Youngstown Buckeye Conduit and Youngstown steel sheets, all of which have been used in this new university group. / Sheet Metal contractors the country over recognize the merits of Youngstown steel sheets . . . and use them consistently. / Youngstown products are handled by leading jobbers everywhere.

THE YOUNGSTOWN SHEET & TUBE CO.

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"

General Offices: YOUNGSTOWN, OHIO

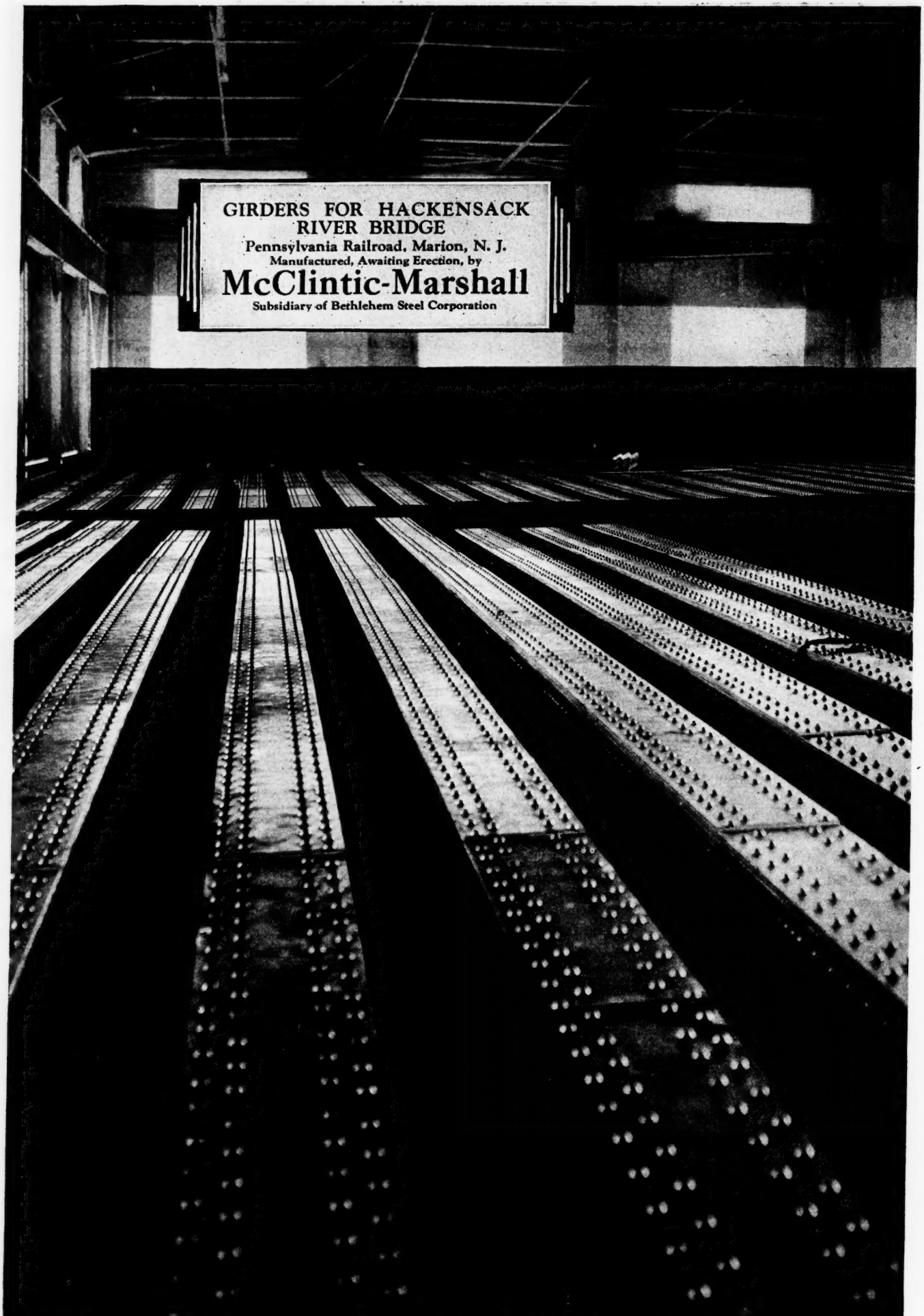
DISTRICT SALES OFFICES:

ATLANTA . . . Healey Building	NEW YORK . . . 30 Church Street
BOSTON Chamber of Commerce Building	Hudson Terminal Building
BUFFALO . . . Liberty Bank Building	PHILADELPHIA . . . Franklin Trust Building
CHICAGO . . . Conway Building	PITTSBURGH . . . Oliver Building
CINCINNATI . . . Union Trust Bldg.	SAN FRANCISCO . . . 55 New Montgomery Street
CLEVELAND . . . Term'l Tower Bldg.	SEATTLE . . . Central Building
DALLAS . . . Magnolia Building	ST. LOUIS . . . Louderman Bldg.
DENVER . . . Continental Oil Bldg.	YOUNGSTOWN . . . Stambaugh Building
DETROIT . . . Fisher Building	
KANSAS CITY, MO. . . Commerce Building	
LOS ANGELES . . . 3000 Santa Fe Ave.	
MEMPHIS . . . 42 Keel Avenue	
MINNEAPOLIS . . . Andrus Bldg.	
NEW ORLEANS . . . Hibbard Bldg.	

LONDON REPRESENTATIVE:
The Youngstown Steel Products Company, Dashwood House, Old Broad Street, London, E. C. 4.

YOUNGSTOWN

GALVANIZED SHEETS PROTECT · SAVE WITH STEEL



**GIRDERS FOR HACKENSACK
RIVER BRIDGE**

Pennsylvania Railroad, Marion, N. J.

Manufactured, Awaiting Erection, by

McClintic-Marshall

Subsidiary of Bethlehem Steel Corporation

T. J. SKILLMAN, Chief Engineer, PENNSYLVANIA RAILROAD COMPANY A. R. WILSON, Engineer of Bridges and Buildings

VIRGINIA BRIDGE

Presents

TODAY'S AND TOMORROW'S—BRIDGES

An Epic in Six Pictures



Heavy traffic requires strong bridges, wide rivers, long spans. We want to get "across the river" quick, older methods are too slow. Also we want to be sure we can get across anytime and all the time.

As in the case of the skyscraper, steel and the steel engineer and builder have made possible our long-span bridges thereby keeping clear a wide channel in navigable waterways and also avoiding the hazards of deep water foundations.

More and more State highway departments have been enabled to connect up important routes with a safe dependable steel bridge, good for today and many tomorrows.

Our Company has had a considerable part in this, just as it has had in steel bridge and building construction generally throughout the South and West for nearly 40 years.



VIRGINIA BRIDGE & IRON CO.

Roanoke Birmingham Memphis Atlanta New Orleans
New York Los Angeles Charlotte Dallas El Paso



790-foot Cantilever Highway Span over White River, Clarendon, Ark., manufactured and erected by us. Ira G. Hedrick, Inc., Consulting Engineer, Austin Bridge Co., General Contractors.

766-foot continuous span over Tennessee River, Scottsboro, Ala. Kansas City Bridge Co., General Contractors.

766-foot continuous span and four 200-foot spans over the Tennessee River at Whitesburg, Ala. Hardaway Contracting Co., Gen'l Contr's. We manufactured and erected this steelwork, as well as the Scottsboro Bridge above.

640-foot Cantilever Span over White River, Newport, Ark. Ira G. Hedrick, Inc., Consulting Engineer, Missouri Valley Bridge & Iron Co., Gen'l Contr's. We furnished a duplicate of this span for White River Bridge at New Augusta, Ark.



TRACK BOLTS AND SPIKES

Quality Materials,
Diligent Inspection and
Excellence of Manufacture

recommend

**TENNESSEE TRACK BOLTS
and
TENNESSEE TRACK SPIKES**

to the good judgement of all who are concerned with
the installation and maintenance of railway tracks
that are designed for fast and heavy traffic.

Let us quote on your requirements of track materials,
including, in addition to the above, Rails, Splice Bars
and Tie Plates.

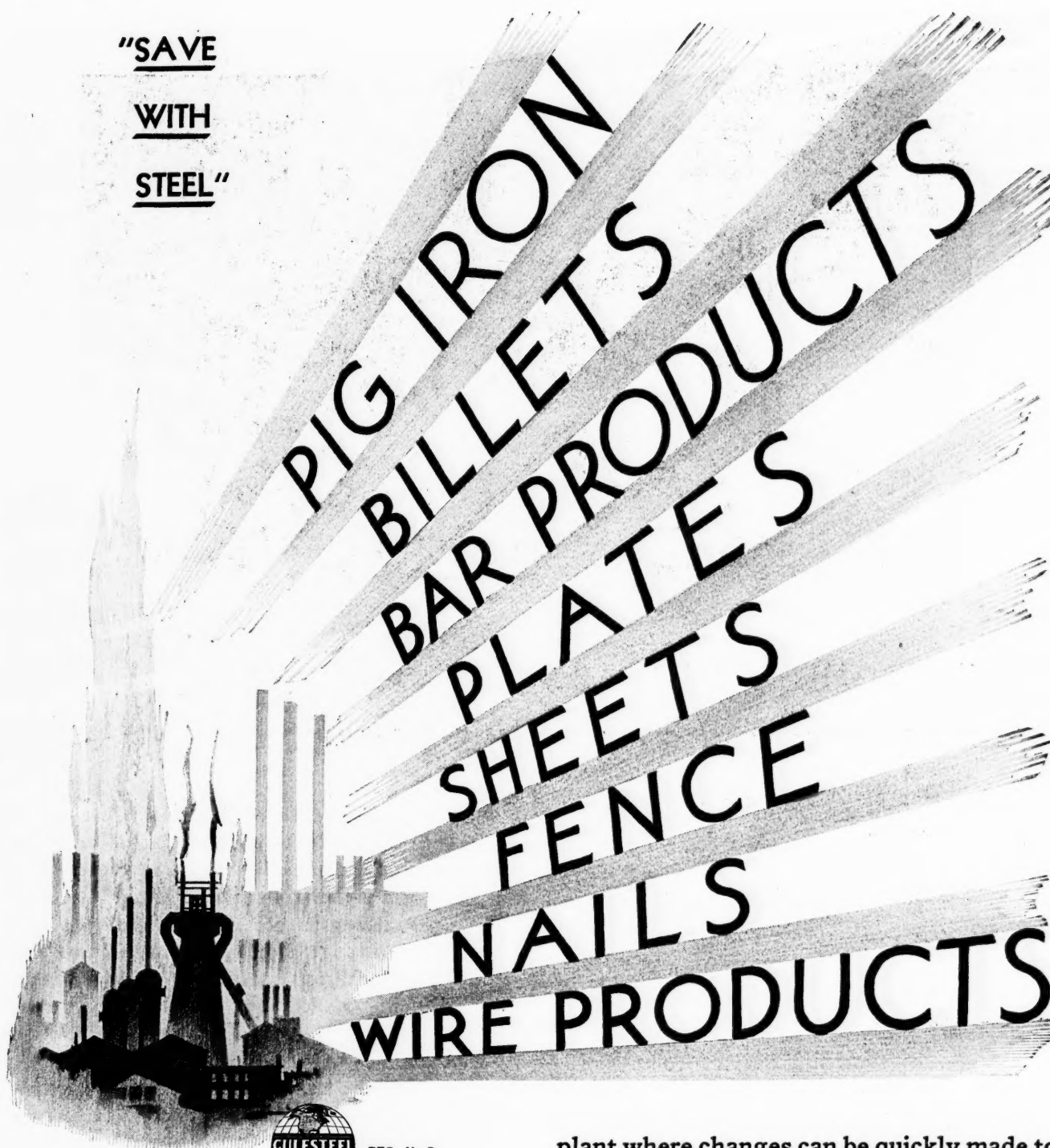
Tennessee Coal, Iron & Railroad Co.

General Offices: Brown-Marx Bldg., BIRMINGHAM, ALA.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION



"SAVE
WITH
STEEL"



REG. U. S.
PAT. OFF.

WHATEVER your steel requirements, from a 5-ton ingot to a 2d nail —GULFSTEEL makes them all—with every manufacturing process at one big

plant where changes can be quickly made to suit your special requirements. This means that GULFSTEEL products are not only metallurgically correct but possess the *personality* that fits them for the purpose intended. In buying GULFSTEEL products you get the right steel for the job.

GULF STATES STEEL COMPANY
BIRMINGHAM, ALABAMA

GULFSTEEL



"WHY DON'T YOU FOLKS HANG A BIGGER DIPPER ON THIS SHOVEL?"

BRANCH OFFICES

Atlanta Jacksonville
Baltimore Kansas City
Birmingham Memphis
Dallas St. Louis

Warehouses and Service Stations

Dallas — Jacksonville
Memphis

AGENTS

Albuquerque, N. M., B.
L. Harrison Co., 123 No.
4th St.; Atlanta, Ga.,
Yancey Bros., 634 White-
hall St., S. W.; Houston,
Tex., R. B. Everett & Co.,
1112-4 Harrisburg Blvd.;
Jacksonville, Fla., Bur-
gess Tractor-Equip. Co., 5
Riverside Viaduct; Miami,
Fla., McDonald Tractor-
Equip. Co., 2150 N. W.
1st Court; New Orleans,
La., S. S. S. Equip. Co.,
1510 Tchoupitoulas St.;
St. Louis, Mo., Hammer-
Corroon Mch. Co., 1116
Keston's Bank Bldg.

.... because this shovel will handle more yardage at lower cost with this dipper than it would with a larger dipper. Because this and every other P & H shovel is built to handle the most yardage at the lowest cost.

You can't measure shovel capacity in terms of dipper size any more than you can judge a man's brains by the size of his hat.

Capacity is determined by three factors—always has been and always

will be: swing speed, line speed, rapidity and sureness of crowding motion, ability to move rapidly from one job to another, power of motor, strength to stand the sudden strains of tough digging, endurance and freedom from frequent stoppage for repairs.

If you look only at dipper size, you're likely to be misled. If you look at what's behind the dipper, at the guts and speed of the machine, you'll be sure of getting better yardage, you'll be sure of lower costs.

HARRISON-VEGER CORPORATION

Established in 1907
4421 West National Avenue, Chicago, Illinois



27 STANDARD MODELS

\$5,000.00 TO \$25,000.00

SHOVELS, CRANES, SKIDDERES, WINCHES

FULL REVOLVING MOVERS

Whenever Dryers become Drones

THERE are some cases where drying equipment is necessary. Then of course, a Kiln Mill is never offered as a substitute.

But for certain pulverizing operations, a Kiln Mill can handle the drying and grinding as a single process. Under such circumstances, separate dryers are needless and uneconomical.

And in these times, any unnecessary equipment is simply a drone in the hive of industry, and cannot be tolerated.

Here is a typical example of how progressive plant owners are replacing less profitable units with the Raymond system of mill drying.

In 1925, a Michigan cement plant installed two Raymond Roller Mills to operate with rotary dryers for handling coal. In 1929, when a third mill was added, Raymond engineers recommended the adoption of *air-drying-in-the-mill* for the whole installation.

The three mills were equipped as Kiln Mills, utilizing waste heat available in the plant. Now, the green coal, carrying up to a maximum of 8% moisture, is fed directly to the Kiln Mills, then pulverized and dried to a minimum moisture content of less than *one per cent*.

All three mills have been giving these average results for over a year, and are completely satisfactory. The economies in power, labor and maintenance, proved to be so great that the dryers have been abandoned. As reported in the words of the plant manager:—

"We tore out the dryers, and used the space for storage."

If you have a problem in drying-and-grinding any kind of material, be sure to investigate the advantages of the Raymond Kiln Mill. Let us send you a copy of the Kiln Mill BULLETIN.

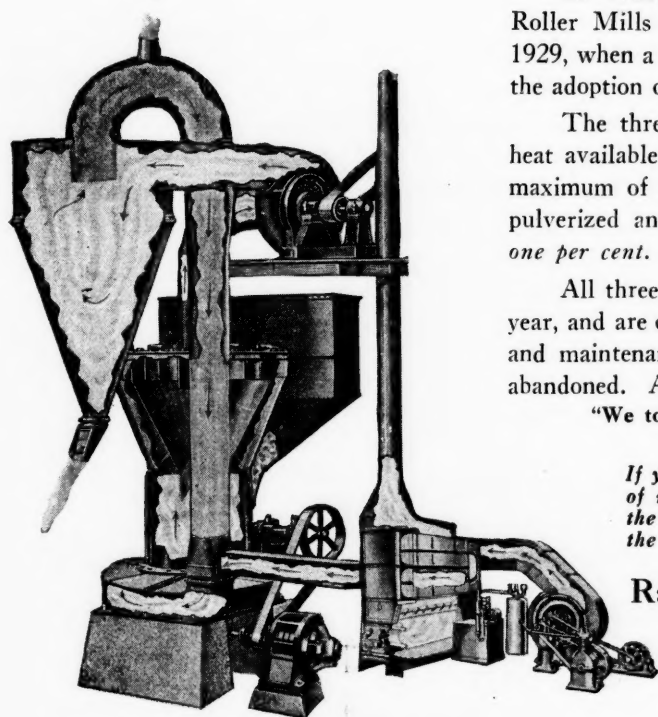
Raymond Bros. Impact Pulverizer Co.

Main Office and Works
1323 North Branch Street, Chicago

342 Madison Avenue
New York



Subway Terminal Bldg.
Los Angeles



*Illustrating the Principle of the
Raymond Kiln Mill*

Controlled heated air, passed into the grinding chamber, dries the material while pulverizing.

RAYMOND

KILN MILLS

DIRECTORY

ARCHITECTS

ENGINEERS

CHEMISTS

GEOLOGISTS

CHEMICAL ENGINEERS

ACCOUNTANTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Milburn, Heister & Co.

Architects

WASHINGTON, D. C.

Wm. J. J. Chase, A. I. A.

Architect

Public and Commercial Buildings
140 Peachtree St. ATLANTA, GA.**G. Lloyd Preacher & Co., Inc.**

Architects and Engineers

501 Mortgage Guarantee Bldg.
ATLANTA, GA.**B. Russell Shaw Co.**INCORPORATED
Consulting and Designing Engineers
AIRPORTS—AIRLINES
Arcade Bldg., ST. LOUIS, MO.**J. B. Converse & Co., Inc.**

Engineers

Industrial Investigations, reports,
plans, estimates, supervision.
MOBILE, ALA.**Charlton & Davis**

Civil Engineers

MIAMI FORT LAUDERDALE
WEST PALM BEACH**Elroy G. Smith**Consulting and Designing
Civil-Hydraulic Engineer
Industrial Hydro-Electric Development
a Specialty
113-313-A Herald Bldg.,
AUGUSTA, GA.**Hornbuckle Contracting Co.**

INCORPORATED

Municipal Improvements
Industrial Village Utilities
ATLANTA, GA.**Harza Engineering Co.**

Consulting Engineers

Dams, Hydraulic, Hydro-Electric, Flood
Control and Sanitary Projects
30 N. Wacker Drive CHICAGO**S. E. Huey**

Consulting Engineer

Civil, Structural, Natural Gas
Ouchita Bank Bldg., MONROE, LA.
City Bank Bldg., SHREVEPORT, LA.**J. E. Greiner & Company**

Consulting Engineers

Design, Construction, Investigation, Ad-
visory Service—Bridges, Docks, Piers,
Warehouses and other Engineering
Structures.
1201 St. Paul St., BALTIMORE, MD.**Whitman, Requaardt & Smith**

Engineers

Water Supply, Sewerage and Structural
Engineering, Reports, Designs,
Valuations.
Baltimore Trust Bldg., BALTIMORE, MD.
ATLANTA, GA. ALBANY, N. Y.**Chas. T. Main, Inc.**

Industrial Engineers

Mills, Warehouses, Complete Develop-
ments.
Electrical, Steam and Water Power
Reports Appraisals
201 Devonshire St. BOSTON, MASS.**C. A. P. Turner**

Consulting Engineer

M. Am. Soc. C. E. Reinforced concrete
and Structural Steel Bridges, Buildings,
and Manufacturing Plants.
300 Builders Exchange Bldg.
MINNEAPOLIS, MINN.**Walter H. Wheeler**

M.A.S.C.E. and M.E.

Engineers

Mfg. Plants, Buildings, Bridges, Dams,
1000 Met. Life Bldg.,
MINNEAPOLIS, MINN.**Consoer, Older & Quinlan, Inc.**

Mems. A. S. C. E.

Consulting Engineers

Water Supply—Sewerage—Industrial
Engineering
317 N. 11th St. ST. LOUIS, MO.
205 W. Wacker Drive, CHICAGO, ILL.**Kansas City Bridge Co.**Established 1893
Builders of Railroad and
Highway Bridges
River Improvement Work
General Office, 215 Pershing Road (Union
Station Plaza), KANSAS CITY, MO.**William S. Lee**Mem. Am. Soc. C. E.; Mem. Am. Soc.
M. E.; Mem. Eng. Inst. Can.; Fellow
Am. Inst. E. E.

Consulting Engineer

535 Fifth Ave. NEW YORK CITY
CHARLOTTE, NORTH CAROLINA**MacElwee & Crandall, Inc.**Industrial and Civil Engineers
Investigations, Reports, Design, Super-
vision—Port Development, Piers, Ter-
minals, Airports, City Planning, Water
Front, Reclamation, Industrial Surveys
Main Office: 134 Main Street
11 West 42nd Street
CAMBRIDGE, MASS. NEW YORK CITY**Morris Knowles, Inc.**

Engineers

Water Supply and Purification, Sewer-
age and Sewage Disposal, Valuations,
Laboratory, City Planning.
PITTSBURGH, PA.**Gardner & Howe**

Structural Engineers

Steel and Reinforced Concrete Buildings,
Bridges and ViaductsPorter Bldg. MEMPHIS, TENN.
Kirby Bldg. DALLAS, TEXAS**Freeland, Roberts & Co.**

Consulting Engineers

Concrete and Steel Structures
NASHVILLE, TENN.**C. N. Harrub Engineering Co.**

Member Am. Soc. C. E.

Civil and Sanitary Engineers

Water Supply, Sewerage, Paving and
Structural Improvements.
705-9 Fourth & First Nat'l. Bk. Bldg.
NASHVILLE, TENN.**Engineering Service Corp.**

Consulting Engineers

Civil-Electrical-Mechanical-Refrigeration
Cold and Dry STORAGE WAREHOUSE
DESIGNS
Reports—Appraisals—Designs—Surveys
Docks and Harbor Designs—Ind. Engr.
Water Sup.—Sewer Sys.—Oil and Gas Lines
HOUSTON, TEXAS U. S. A.**Gilbert C. White Co.**

Consulting Engineers

Waterworks Paving
SewerageRICHMOND, VA.
DURHAM, N. C.**Robert Cramer**

Consulting Engineer

Sewage Disposal Plants and Sewerage
Systems—Utilization and Disposal of
Industrial Wastes. Power Plants,
Design, Construction, Operation, Labora-
tory Service, Valuations and Reports.
647 W. Virginia St.,
MILWAUKEE, WIS.**Smallman-MacQueen**

Construction Co., Inc.

Engineers and Contractors

BIRMINGHAM, ALA.

T. C. Thompson and Bros.

Incorporated 1895

General Contractors and Builders

BIRMINGHAM, ALA.
CHARLOTTE, N. C.**Algernon Blair**

Contractor

MONTGOMERY, ALA.

Southern Erectors, Inc.

Steel Erectors

ATLANTA, GA.
TAMPA, FLA.**Walker Electrical Company**

Electrical Contractors

General Office: ATLANTA, GA.
Sales Office:
ATLANTA, GA. COLUMBUS, GA.
GREENSBORO, N. C.**Hoosier Engineering Company**

100 W. Monroe St., CHICAGO

Erectors of Transmission Lines
Electric—Gas—OilSmith Tower 225 Broadway
SEATTLE, WASH. NEW YORK, N. Y.**J. V. & R. T. Burkes, Inc.**

General Contractors

MEMBER A. G. C. NEW ORLEANS

John Eichleay, Jr. Co.

Steel Construction

Structural Steel
House Raising and Moving
Shoring and Foundation Work
South 20th & Wharton Sts.
PITTSBURGH, PA.**Webb Electric Company**

Electrical Contractors

Industrial, Commercial and Institutional
Electrical Installations.

ANDERSON, S. C.

Fiske-Carter Construction Co.

General Contractors

GREENVILLE, S. C.
SPARTANBURG, S. C.**Poe Piping & Heating Co.**

Contractors

For Power Piping, Heating and
Sprinkler Systems

103 S. Main St., GREENVILLE, S. C.

Lee A. Gridley Construction Co.

General Construction

CRANE SERVICE—FOUNDATIONS
KNOXVILLE, TENN.**Steel & Lebbey**

JOHN A. STEEL, JR.

THOS. D. LEBBEY

Engineers and Constructors

The design and erection of concrete and
steel structures.
Holston Bank Building,
KNOXVILLE, TENN.**The Warner Service Company**Electrical and Mechanical
ContractorsCor. Clinch and Central Ave.
KNOXVILLE, TENN.**Charles W. Alpaugh & Sons**

Hydraulic and Construction Engineers

Dams a Specialty: Investigations,
Estimates Free
MANASSAS, VA.**Virginia Engineering Co., Inc.**

General Contractors

Government—Municipal—Industrial
Buildings—Power Plants—Heating
Plumbing—Electrical—Highways
Sewer and Water Systems—Dams
Fire Protection—Refrigeration
1st Nat'l Bk. Bldg.
NEWPORT NEWS, VA.**The John W. Cowper Co., Inc.**

General Contractors

State Planters Bank Bldg.
RICHMOND, VA.**J. L. Myers & Sons**Drillers of Shallow and Deep Wells
in the South Since 1894Box 105, T. C. Station
DENTON, TEXAS**Audit Company of the South**

Charles James Metz

President

Mem. American Institute of Accountants
Certified Public Accountant of Georgia
ATLANTA, GA.**Joe B. Martin**

Quantity Surveyor

CHARLOTTE, N. C.

Sixteen Years Actual Experience

FAMILIARIZE yourself
with the SOUTH'S pro-
gress by reading the MANU-
FACTURERS RECORD.

DIRECTORY

ARCHITECTS ENGINEERS CHEMISTS GEOLOGISTS
CHEMICAL ENGINEERS ACCOUNTANTS CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

The Picard Laboratories

Chemists and Inspecting Engineers
Inspection of Cast Iron Pipe, Structural Steel, Cement, Railroad Equipment, etc.
Chemical Analysis of all kinds.
Representation in all Principal Cities
Clark Building, BIRMINGHAM, ALA.

W. Wade Moss, Jr.

Chemist
Research and Creative Laboratories
Development of Industrial Processes
Special attention given to exploration of Natural Resources of Southern States.
Lynch Bldg. COLUMBUS, GA.

Stillman & Van Sieten, Inc.

Chemists and Chemical Engineers
Analysis and Inspection of Asphalt, Paving Materials, Cement, Concrete Building Materials.
227 Front Street NEW YORK
BEEKMAN 5261

Barrow-Agee Laboratories, Inc.

Chemists and Engineers
Analysis tests and inspection of all building and construction materials.
MEMPHIS, TENN.
LITTLE ROCK, ARK.
JACKSON, MISS. SHREVEPORT, LA.

William R. Conard

Inspection and Tests of Materials of Engineering and Construction
Reports, Designs, Supervision
Construction
BURLINGTON, N. J.

Dow & Smith

A. W. Dow, Ph.B.; F. P. Smith, Ph.B.
Mem. Am. Inst. Ch. Engrs.
Mem. Am. Soc. Civ. Engrs.
Chemical Engineers, Consulting Paving Engineers, Asphalts, Bitumens, Cement, Paving Materials
131 East 23rd St. NEW YORK

W. S. BARSTOW & COMPANY

INCORPORATED
ENGINEERING — DESIGN — CONSTRUCTION
INDUSTRIAL PLANTS — PUBLIC UTILITIES
Consultation Invited on Building Projects
120 Wall Street NEW YORK CITY 412 Washington Street READING, PENNA.

SANDERSON & PORTER

ENGINEERS
FOR THE
FINANCING—REORGANIZATION—
DESIGN—CONSTRUCTION
OF
INDUSTRIALS and PUBLIC UTILITIES
CHICAGO NEW YORK SAN FRANCISCO

Scofield Engineering Company

Consulting Engineers
POWER AND INDUSTRIAL PLANTS AND PROCESSES.
Design—Supervision—Valuations.
Commercial Trust Bldg., PHILADELPHIA

J. E. Sirrine & Company

Engineers
Factory Design: Hydro- and Steam-Electric Plants; Warehouses, Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports.
General Offices: GREENVILLE, SOUTH CAROLINA

Allen J. Saville, Inc.

ENGINEERING AND CONSTRUCTION
Electric Building RICHMOND, VIRGINIA

WILEY & WILSON

Consulting Engineers
STEAM AND ELECTRIC POWER PLANTS
CENTRAL PLANT HEATING SYSTEMS
Heating and Ventilating Equipments for Public and Private Buildings
WATER SUPPLY, SEWERAGE AND SEWAGE DISPOSAL
MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.

Hardaway Contracting Company

Engineers Contractors
Water Power Developments, Bridges
COLUMBUS, GEORGIA

Cornell-Young Company

INCORPORATED
General Contractors
Railroads and Highways, Reinforced Concrete and Steam Shovel Work.
704 Georgia Casualty Bldg. MACON, GEORGIA

Kennedy-Riegger Drilling Co., Inc.

Engineers & Contractors
Diamond Drill & Wash Borings
30 Church Street NEW YORK CITY

Sprague & Henwood, Inc.

Diamond Core Drilling and Wash Borings.
For Buildings, Bridges, Dams and all kinds of Minerals
"ANYWHERE"
Main Office SCRANTON, PA.

Courtenay De Kalb

Mining Engineer and Economic Geologist
Reports on Mineral Products
Design and Advice on Treatment Plants for Ores and Non-Metallic Products
15 Gramercy Park NEW YORK, N. Y.

Tilghman Moyer Company

Bank Architects and Builders
ALLENTOWN PENNSYLVANIA

The J. B. McCrary Company

Engineers
ATLANTA MUNICIPAL IMPROVEMENTS GEORGIA
We design and construct Water-Works, Electric-Light and Sewer Systems—Paving and Road Work.

Wiedeman and Singleton, Inc.

(Successors to Paul H. Norcross)
Consulting Engineers
WATER WORKS, SEWERS, SEWAGE DISPOSAL
APPRAISALS, VALUATIONS, REPORTS
Candler Building ATLANTA, GA.

Bylesby Engineering & Management Corporation

*Wholly-owned Subsidiary of
Standard Gas and Electric Company*
231 South LaSalle Street, Chicago
NEW YORK PITTSBURGH SAN FRANCISCO

Lockwood Greene Engineers, Inc.

*Plans—Specifications—Reports—
Appraisals—for Industrial Plants*
NEW YORK BOSTON CHICAGO CLEVELAND SPARTANBURG

Frederick Snare Corporation

Contracting Engineers
Difficult Foundations and Engineering Problems a Specialty
114 Liberty Street
New York
PHILADELPHIA HAVANA

Tucker & Laxton

Contracting Engineers
Filters, Concrete Work, Hydro-Electric and Steam Electric Construction
CHARLOTTE, NORTH CAROLINA

The J. G. White Engineering Corporation

Engineers—Constructors
48 Exchange Place NEW YORK

DIRECTORY

ARCHITECTS ENGINEERS CHEMISTS GEOLOGISTS
CHEMICAL ENGINEERS ACCOUNTANTS CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Robert W. Hunt Company

ENGINEERS

Inspection—Tests—Consultation

22nd FLOOR INSURANCE EXCHANGE, CHICAGO
Laboratories and Offices in all Large Cities

Established 1881

Froehling and Robertson, Inc.

Inspection Engineers and Chemists

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile
Design and Control of Asphalt and Concrete Mixture
Water Analysis a Specialty.

RICHMOND

NEW YORK CITY

Southern Drilling Company

Diamond Core Drill Contractors

Foundation Testing for Buildings, Bridges and Dams
Exploration and development of coal and mineral properties.

SALTVILLE, VIRGINIA

Pittsburgh Testing Laboratory

ANALYSIS

INSPECTION

TESTING

RESEARCH

PITTSBURGH, PA.

Branch Offices in the Principal Cities

Southwestern Laboratories

Chemical and Testing Engineers

Inspection Steel and Cement for Bridges and Buildings. Creosoted Timber,
Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement
at Plant, Chemical Analysis, Etc. Representation at usual points of origin.

FORT WORTH DALLAS HOUSTON AMARILLO SAN ANTONIO

Mott Core Drilling Company

Diamond Core Drill Contractors

We Test Coal, Clays and Mineral Properties, Foundation Testing, Dams,
Bridges, Buildings, Wash Borings, Dry Samples.

MAIN OFFICE

HUNTINGTON, W. VA.



WE LOOK INTO THE EARTH

By use of Diamond Core Drills

We test foundations for buildings,
bridges and dams. We prospect coal
and mineral lands in any part of North
and South America.

PENNSYLVANIA DRILLING CO

1812 West Carson St., Pittsburgh, Pa.
Drilling Contractors

SEAWALLS

WEBER SYSTEM

MANY DIFFERENT TYPES TO MEET EVERY CONDITION
SAFEST AND MOST PERMANENT CONSTRUCTION

ENORMOUS SAVING OF COST
FOR COMPLETE INFORMATION WRITE TO—

SHORE-LINE BUILDERS, INC.
JACKSONVILLE, FLORIDA

WEBER SYSTEM

BULKHEADS

Florida

Leads the Union in the production of citrus fruits and winter vegetables.

Cattle raising and dairying are also fast becoming leading industries of the state.

Soil—climate and ample rainfall are the main contributing factors.

*You should investigate these
and other opportunities that
the state has to offer.*

For information and literature—write

Model Land Company

Flagler System

St. Augustine

Florida

*The late Henry M. Flagler and his organizations have served
Florida since 1886*

Opportunity for Manufacturers at Danville, Va.

*For full
particulars
communicate
with*

The City of Danville is in position and desires to offer unusual advantages, such as cheaper electric power, ample water supply at low rates, splendid factory sites, cheap labor in abundance and exemption from local taxation for a period not exceeding five years, as an inducement for manufacturing enterprises to locate in the City.

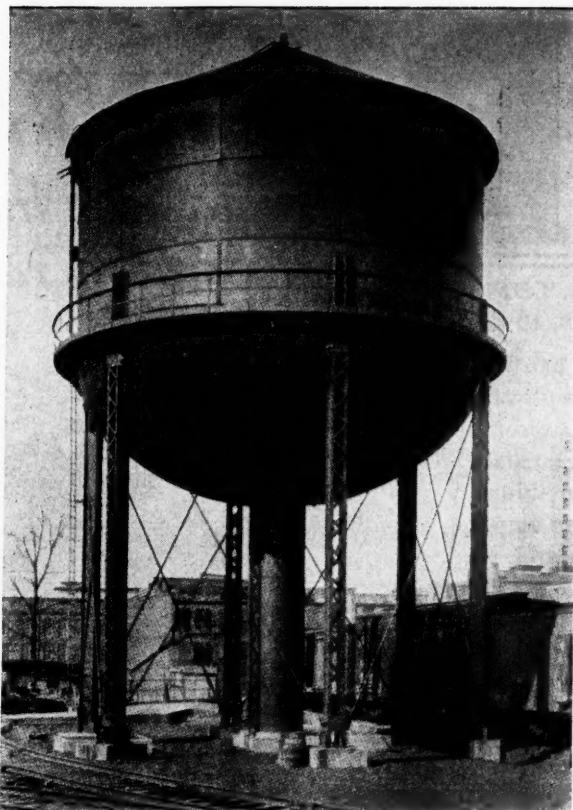
C. B. Strange, City Auditor and Clerk
Post Office Box 475 Danville, Va.

OPPORTUNITIES

Industrial and Agricultural

The A. & W. P.—W. Ry. of Alabama and Georgia Railroads traverse a territory rich in material and potential resources. Attractive industrial sites. For information apply:

**Commercial and Agricultural
Dev. Dept.—Above Lines
Atlanta, Georgia**



TANKS designed to comply with most rigid requirements

We manufacture elevated Steel Tanks for Water Storage for use in municipal water works plants and private manufacturing plants and mills.

Our shop ranks with the best in the country for the production of Tanks, Towers and Standpipes.

We design structures that will comply with the most rigid insurance requirements, and make a specialty of building tanks under the supervision of various insurance associations.

If you have an unusual requirement for a tank let our Engineering Department work with you.

Manufacturers of

STEEL BUILDINGS — ROTARY DRYERS — STEEL PLATE WORK
MUNICIPAL CASTINGS — GREY IRON CASTINGS — PUMPS
SEED AND GRAIN TANKS — DREDGE PIPE — INCINERATORS
ELEVATED WATER TANKS — BOILERS AND ENGINES
STEEL STORAGE TANKS — ACID TANKS

J. S. SCHOFIELD'S SONS CO., INC.
MACON **GEORGIA, U. S. A.**

ORD *FINISHER*

averaged 1000 lineal feet of 18 ft. "water-cement ratio concrete" road per day.

Yoakum, Texas
Nov. 28, 1930

"The ORD Machine we have, has finished 32 miles of 18' concrete highway in the past twelve months. The results obtained have been entirely satisfactory and the machine has been able to keep up with the finishing with ample to spare even though at times we poured as much as 1400 lin. feet per day over a period of several weeks. About 14 miles of this work was "water-cement ratio concrete" the mix being very dry and the machine performed satisfactorily, averaging 1000 lin. feet per day."

INTERSTATE CONTRACTING CO.
W. L. Bullock, Mgr.

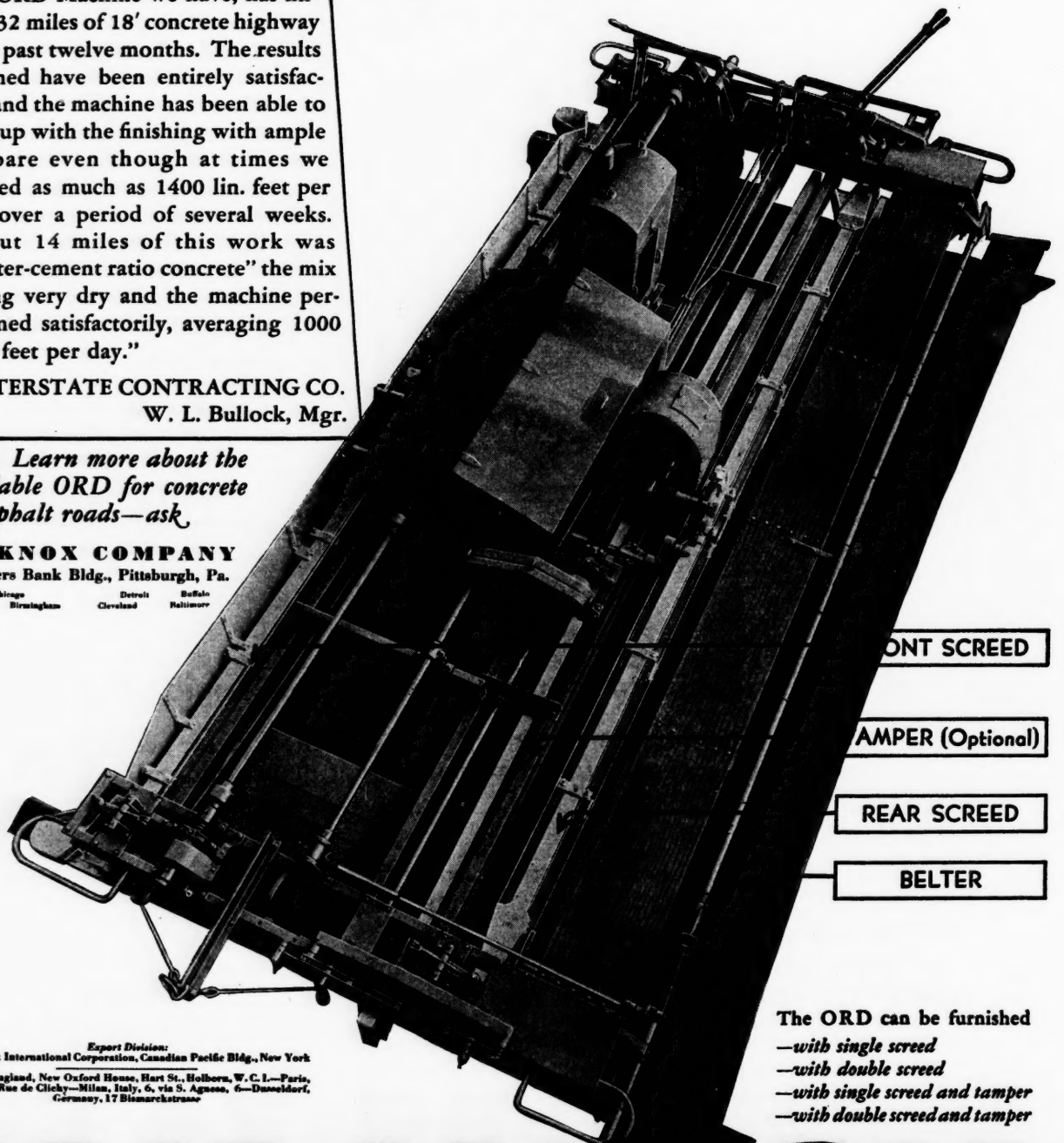
Learn more about the dependable ORD for concrete and asphalt roads—ask

BLAW-KNOX COMPANY

2024 Farmers Bank Bldg., Pittsburgh, Pa.

New York Chicago Detroit Buffalo
Philadelphia Birmingham Cleveland Baltimore

Export Division:
Blaw-Knox International Corporation, Canadian Pacific Bldg., New York
London, England, New Oxford House, Hart St., Holborn, W. C. 1—Paris,
France, 1 Rue de Clugny—Milan, Italy, 6, via S. Agnese, 6—Düsseldorf,
Germany, 17 Bismarckstrasse



The ORD can be furnished
—with single screed
—with double screed
—with single screed and tamper
—with double screed and tamper

BLAW-KNOX

Road Forms—Ord Road Finishers—Batcherplants—Weighing Batchers—Volume Batchers—The Cementtank—Bulk Cement Plants—Wagon Graders—Steel Forms for Streets and Sidewalks—Truck Turntables—New Method Finish Grader—The Inundation System—Clamshell and Dragline Buckets—Ready Mixed Concrete Plants—Truck Bodies

TABLE OF CONTENTS

Baltimore, Md., June 11, 1931

EDITORIALS

Blue Book of Southern Progress.....	Cover Page
Facts About the Tariff.....	27
Law and Order.....	28
War Preparedness as Prevention.....	28
Tax Exemption Is Only Imaginary.....	29
Business and Politics.....	29

NEWS and FEATURE ARTICLES

Sustained Construction Activity in the South.....	30
Atlanta Never Is Idle.....	By George Garner 32
Western Union Building Completed in Florida.....	33
Southern Railway Completes Important Bridge Program in Kentucky.....	34
\$2,000,000 Chemical Plant for Tulsa, Okla.....	35
Southern Mountains Lure Southern Vacationists.....	35
Efficiency With American Coals.....	36
\$2,500,000 Building Planned for St. Louis.....	37
Detroit Gets Road Show for 1932.....	38
Progress in Southern Paper Making Outlined.....	38
Surveying for Seaport at Brownsville, Texas.....	By John Gregg 39
East Coast Canal Progress Is Shown.....	40
\$3,500,000 Narcotic Farm Site in Fort Worth.....	40
80-Mile Oil Pipeline Built in 23½ Days.....	41
\$10,000,000 Ship Modernization Planned at Norfolk Navy Yard.....	42
Factory Sales Distribution Census.....	43
\$40,000,000 Improvement Bonds Voted at Kansas City.....	43

SPECIAL DEPARTMENTS

Construction, New Industries and Contracts, 17 Pages, Beginning on Page 49

Iron, Steel and Metal Market.....	44	Machinery, Proposals and Supplies Wanted..	63
Aviation, Airports and Airways.....	46	Trade Literature	64
Highways and Motor Transport.....	47	Industrial News	65
New and Improved Equipment.....	48	Financial News	70

Classified Reference for Buyers..... 82

Alphabetical Index to Advertisers..... 97

MANUFACTURERS RECORD

MAIN OFFICE
Manufacturers Record Building,
Commerce and Water Streets,
Baltimore, Md.

Published Every Thursday
by the
MANUFACTURERS RECORD
PUBLISHING Co.
FRANK GOULD, President

BRANCH OFFICES
Chicago—11 S. LaSalle St.
New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$1.00 a year. For other foreign countries add postage \$3.50 a year. Single copies, 20c.; back numbers, one to six months, 50c. each; over six months, \$1.00.

PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS
Member A.B.C.

LEADITE

Trade Mark Registered U.S. Pat. Office

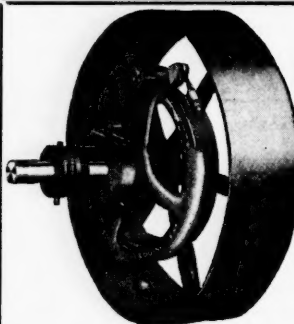
For Jointing Cast-Iron Water Mains
Saves at Least 75%

Leadite Tested and Used for Over 30 Years
Leadite Joints Improve with Age

The Leadite Co., Land Title Bldg., Philadelphia, Pa.

"See our Full Page Ad in 2nd issue each month"

No Caulking



Harnessed Friction

The Caldwell Friction Clutch operates upon the simple, logical principle of harnessed friction—like your automobile brake.

It consists of only eleven parts—all so designed that their greatest strength is in the direction of greatest stress. A flexible band grips the entire circumference of the friction rim and transmits full power smoothly and steadily through any change of load and speed.

Ordinary clutch troubles—usually caused by one of several adjustments being too tight—are not possible in the Caldwell Clutch because one screw adjusts it; one lever controls it.

Send for Catalog.

W. E. Caldwell Co., Incorporated
270 E. Brandeis St., Louisville, Ky.

Caldwell
FRICTION
CLUTCHES

TILE Roofing and Floor

for Residences, Business and Industry

Some new, lower cost types in pleasing natural colors. The most economical roof.

Request literature. Send plans for cost.

B. MIFFLIN HOOD COMPANY
Department M. DAISY, TENN.

SEWER PIPE

CULVERT PIPE

METER BOXES

WALL COPING

DRAIN TILE



FLUE LINING

FIRE BRICK

FIRE CLAY

GRATE BACKS

SEPTIC TANKS

This stamp on Clay Products carries the same guarantee of quality as Sterling on silver.

We solicit your inquiries

LEE CLAY PRODUCTS COMPANY

Office and Plant:

CLEARFIELD, Rowan County KENTUCKY



ALCO

STEEL PLATE WORK



High Quality

Low Cost

Workmanship

TWO PIECES of plate work—identical in appearance—built to the same specifications—alike in all outward respects—and yet there's a world of difference. One will give years of faithful service. The other will cause a virtual shutdown in a great industrial plant. The difference is in the workmanship.

This doesn't happen often. True! But the slightest avoidable chance is too big a gamble.

Alco manufacture guarantees invariable high quality. And Alco's modern methods and facilities make possible very low costs. Write for estimates.

BUBBLE TOWERS • STILLs • SCRUBBERS
DIGESTERS • CREOSOTING CYLINDERS • IMPREGNATORS
MIXING KETTLES • AUTOCLAVES
VULCANIZERS • SPECIAL VESSELS • PRESSURE TANKS
LARGE DIAMETER STEEL PIPES

ALCO PRODUCTS • INCORPORATED
Division of **AMERICAN LOCOMOTIVE COMPANY**

MAIN OFFICE: 220 East 42nd Street, New York, N.Y.

BRANCH OFFICES: 909 McCormick Bldg., Chicago, Ill. • Terminal Tower Bldg., Cleveland, Ohio • 2407 Esperson Bldg., Houston, Tex. • 1203 Philtower Bldg., Tulsa, Okla.
Plant at Dunkirk, N.Y. • Cable Address: Alproducts

Manufacturers Record

Reg. U. S. Pat. Office

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCIX No. 24 }
Weekly }

BALTIMORE, JUNE 11, 1931

{ Single Copies, 20 Cents.
{ \$6.50 a Year

Facts About the Tariff

THE opportunity offered for attack on the United States protective tariff by certain business and financial groups is by no means the least American misfortune in the worldwide depression. The harm is accentuated by the fact that in time of stress loose talking develops in proportion with loose thinking, and bare assertions are swallowed without investigation and without thought of experiences in the past.

Summarized, the main bases for these attacks are: (1) America must purchase freely from foreign lands, to provide money with which the foreigners can buy American goods; (2) the United States is under moral and economic obligation to help foreign countries up to prosperity; (3) the widespread and often almost prohibitive tariffs of other lands are merely retaliatory measures against the American protective tariff.

Against these points may legitimately be presented the following facts: Lowering the American tariff would not promote American export trade appreciably, if at all; over 65 per cent of our imports enter free of duty; (2) the United States can best help the rest of the world by first helping itself; (3) foreign tariffs are not directed against American goods alone, but have been revived by various countries for individual protection against each other.

Under the first head, it is computed that the consumption capacity of all the world outside the United States is approximately one-sixth per capita of American capacity. The American market is overwhelmingly the market for American goods, and the foreign market is of little weight in comparison. By throwing this American market wide open to the near-pauper products of other lands, the United States would lose its own primary market, without gaining appreciable increase in its foreign sales.

As the MANUFACTURERS RECORD pointed out on April 2, American merchandise exports under the McKinley protective tariff in 1893 and 1894 ran to \$1,730,000,000, compared with \$1,660,000,000 under the Wilson low tariff in 1895 and 1896. The last year of the

Wilson law, 1897, showed \$1,050,000,000 in American exports, as against \$1,230,000,000 in the first year of the Dingley protective law, 1898. Under the Fordney-McCumber high tariff in 1929, American exports totaled \$5,240,000,000, or \$120,000,000 more than each of the years 1914 and 1915 showed under low tariff, even with heavy war demands from abroad. American exports have flourished under a protective tariff.

For the first three months of this year, the shrinkage in American exports and imports almost balanced in percentage, in comparison with the same period last year. Evidently, the tariff has not materially affected American world trade.

The American tariff, however, does affect American employment vitally—American employment in labor and capital alike. The United States absorbs approximately 90 per cent of American production. To throw this market wide open to the products of near-pauper labor, in comparison with labor at American wage levels, inevitably will force American labor and capital into idleness. This has been proved conclusively under low-tariff laws.

Deprived of the protective tariff, American labor must sink to the pay and living standards of the cheapest among its foreign competitors. The American people would not be able to buy the foreign goods which the anti-tariff group urges them to purchase, "so that foreigners, in turn, will buy our goods." The general foreign poverty, conspicuous in comparison with the United States, would invade American economic life and debase living standards. We submit that the United States can best help the rest of the world, economically and in morale, by maintaining our own standards and inspiring others upward, rather than by degrading ourselves.

More than 40,000,000 persons in the United States, over 10 years old, are employed in gainful occupations, of whom approximately 10,000,000 are engaged in manufacturing industries, under normal conditions. The pay of factory employes was approximately \$15,200,000,000 in wages and salaries in 1929.

The employment and pay standards of these workers are dependent, directly or indirectly, on the stability of the American protective tariff.

As to foreign tariff "retaliation," the tariff is not an American invention, or a unique American institution. In theory and in practice, it dates back to the days of ancient Greece and ancient Rome. England adopted it in the Tenth Century and clung to it for generations, and since the war has seriously considered its readoption generally in addition to the products now protected. France and other European countries utilized the tariff before the United States was born. Is the proposed German-Austrian tariff alliance planned in retaliation against the United States? Other nations do not think so. The theory of foreign tariff "retaliation" is without sound foundation.

The American protective tariff is not "an artificial barrier," as is charged. It is a very real and substantial barrier—or, is designed to be. Only a substantial barrier can keep out destructive competitors. It is not "artificial," any more than is a defensive wall. Its need is indicated by the fact that England and Germany are exporting 50 per cent of their production, as compared with 10 per cent by the United States, without mention of the convict and pauper production which Russia dumps into America. Never was an American protective tariff more sorely needed than in this period of foreign trade attack.

No proof that the American tariff is working injury to American export trade is presented by tariff critics. On the other hand, Dr. Julius Klein, Assistant Secretary of Commerce, says:

"There is scant evidence of any drastic embargo on American wares in foreign markets. In 19 representative countries all over the world, comprising most of our leading customers, our share in their imports totals last year was almost exactly 20 per cent. Our proportion in the trade of the same markets during 1924-27 averaged 20.7 per cent."

As Dr. Klein well comments, "it certainly would require a considerable amount of deliberate distortion to conjure out of these figures" any conclusion as to the alleged devastating "reprisals" against American wares. Incidentally, preliminary figures for 1931 show almost exactly the same trend as that indicated for 1930.

There is no reason, economic or moral, for the United States to abandon or weaken the American protective tariff. Inequities may be adjusted through the Tariff Commission; but the necessity for the tariff, as a whole, is proved by actual experience and cold statistics.

Law and Order

THE progress of New York and Chicago in their warfare on entrenched crime is encouraging to the entire country. Recent crimes have been followed in a number of instances by prompt arrests and by equally prompt indictments. This has been true

lately in many of the large cities. At last it seems there has been an awakening to the loss of life and property through the activities of the gunman and the racketeer, and there are evidences of an increasing determination to put thugs out of business.

The crime wave in this country has reached unprecedented proportions. Largely by reason of apathy the toll has been great. It is estimated that the tribute paid to crime in the United States is as much as \$12,000,000,000 a year. The cost in human life cannot be estimated. No nation on earth can afford to permit such waste and we doubt if any other country would permit it.

There has been the apparent danger that our people might become tolerant of the evil and in time accept it as a matter of course. If the country is to maintain its self-respect, it must stop the work of the criminal whose boldness in preying upon society has passed all bounds. Success in this direction will tend to strengthen the national morale at a time when every encouragement is of value.

War Preparedness As Prevention

THE War Department has prepared a specific plan for mobilization of men and materials in military emergency. Details in the program hardly will be unanimously satisfactory to all groups, but the preparedness movement as a whole will be approved.

Of outstanding importance are the following points: Industry is not to be impounded; labor is not to be conscripted; governmental price-fixing is not contemplated; war costs are to be paid, as far as practicable, as incurred.

Experiences of the World War form the foundation on which this plan is based. Delay in enacting necessary legislation may be precluded by prompt enactment of a bill which the War Policies Commission already has outlined. Enrollment of the army thus will be made possible without the long interval which retarded American activity in 1917. Industries of every kind will be prepared to play their part from the outset, and transportation and other factors are to be placed on a war basis in short order.

"The plan contemplates no imposition of military control over industrial establishments," the War Department explains. Industry is expected to organize itself in such manner as to be effectively responsive to the needs of the Nation, as expressed by Congress and the President.

Instead of conscription for labor, the workingman is to be introduced to his task voluntarily and is counted on to remain of his own accord until his job is completed.

For governmental price-fixing, war-time contracts will be substituted, framed "to eliminate the temptation to pad costs that accompanied the use of the cost-plus percentage contract of the World War."

This policy, it is felt, "will assure honest service and honest goods for prices paid."

"More than this," the War Department continues, "the department believes in the registration of wealth and all accretions thereto in war, accomplished in much the same manner as a registration of man power. This will facilitate the imposition of taxes whose purpose should be not only to pay, as far as practicable, for the war as it is fought, but also to assist in distributing equitably the economic burdens of war."

The Government thus informs labor and capital of the contemplated policies which will affect them individually and directly. Opportunity now is open for readjustments, amendments and other possible changes.

Tax Exemption Is Only Imaginary

FURTHER evidence that taxation, even though invisible, penetrates into every group of the people, and into every crevice in domestic and business life, is presented in a notation on rent bills in New York City: "You are paying \$... of your annual rent bill in real estate taxes to New York City. Economy in government means lower rent."

In building construction, for instance, taxes are levied on the land and on the improvements, and in all probability on the capital which finances the enterprise. The train of taxes which follows is almost endless—on the concerns which furnish the brick and the lumber and the fixtures; on the railroads or trucks which haul the freight and on the coal or gas which fuels them; on the forests from which the timber is cut and on the lands from which the clay is extracted. These are only a few items. In many instances, a tax is multiplied, as when collected by the Federal, state, county and local governments on a single object. And in the end these multiple and multiplied taxes are paid by the ultimate consumer—the occupant of the property, either owner or lessee.

The fancied exemption of 119,500,000 persons from the national income tax is a costly mirage for them. Through scores of taxes indirectly imposed, they now must make up a treasury deficit of not far from \$1,000,000,000.

Economy in government means not only lower rent, but also a higher living standard and at less expense. Not a man, woman or child in the country escapes taxation, or can escape. They can, however, moderate the load by insistence on governmental economy. The real estate group is doing a distinct national service by impressing this fact on the people.

Beware what you set your heart upon, for it surely shall be yours.—Emerson.

Business and Politics

THE nature of the composite economic, social and political program announced by a United States Senator for the cure and prevention of business depression emphasizes the necessity now for facing conditions in practical rather than theoretical fashion. Prominent in the announced program is "stabilization of industry," apparently to be established partly by fewer working hours, together with Federal unemployment relief, maintenance of wage levels and other seductive items. Artificial rules are to replace the immutable laws of nature.

Opposed to the countless theoretical stabilization plans now proposed stands the fact that this is a world of flux—of economic, social, political, intellectual and even religious ebb and flow. Stabilization is impossible at any point in all the universe. Static conditions are as abhorrent to nature as is the vacuum. Only when this is understood can the problem of improving conditions be properly approached.

Most encouraging among present signs of the times is the indication that American people are getting back to earth, recurring to that system of sound and constructive thought which has made this the greatest nation in world history. In the normal national mental attitude, the theoretical programs and vapid vapors of visionaries and demagogues will lose weight. The individual and mass delirium of mental panic will give place to sober consideration.

First, the fact must be accepted that periods of depression are as inevitable as prosperity. The true task of the present and approaching generations is to mitigate the evils in the two extremes—to strike an average which, without stabilization or static, will assuage the suffering in hard times and preclude the over-extravagances and prodigality of financial superabundance. Human nature being what it is, this task assumes tremendous magnitude.

The objective in the proposed stabilization of industry undoubtedly is uninterrupted employment for the worker at adequate wage levels. To say that this end cannot be worked out would be pessimistic. On the other hand, the cold fact must be accepted that industrial operation inevitably must fluctuate in obedience to the law of Supply and Demand, and wages and dividends alike must rise and fall with the tide of business.

Absolute industrial stabilization, were such a thing possible, would minimize business competition and even would dampen individual ambition in the factory and the shop. In the end it would crumble through actual instability.

"After all, it was business and not politics that made the greatest prosperity the world had ever seen," said Edward A. Filene to the Chamber of Commerce of the United States at Atlantic City.

So it is that American business may be expected to work out the present problems, and not "the politicians and mountebanks who claim to know the answer to the present unemployment problem," as Mr. Filene expressed it.

Sustained Construction Activity

Weekly Average for Month of May in South Compares Favorably With April Awards

CONTRACTS awarded for construction, building and engineering projects in the 16 Southern States during the first five months of this year swelled into a total value of \$327,123,000, compared with awards totaling \$311,508,500, covering similar projects in the same territory, in the corresponding five months of 1930. The valuation of construction awards to June 1, 1931, exceeds by more than 5 per cent that for the corresponding period of 1930, the net gain being \$15,615,000.

In comparing this year's figures with those of the preceding year, account should be taken of the decreased cost of building, an estimated range of 10 to 20 per cent. Therefore, while the net increase in valuation of contracts placed in the first five months of this year over the same period of last year is about 5 per cent, the increased volume of work put under way is conservatively estimated at 20 per cent. These figures are based on compilations of reports published in the DAILY CONSTRUCTION BULLETIN and in the construction columns of the MANUFACTURERS RECORD.

May awards aggregated \$69,047,000 for a four-week period, compared with awards in April for a five-week period, totaling \$88,884,000, the second highest monthly total on record. The average weekly awards for April and May were \$17,770,000 and \$17,260,000, respectively, indicating that construction activity is being maintained in the territory from Maryland to Texas. In May, 1930, similar awards had a total valuation of \$75,023,500.

Encouragement is to be found in the fact that May awards cover practically all types of projects and every section of the South.

Roads, streets and bridges continue to hold first place in valuation, the May total exceeding \$29,000,000, bringing the aggregate value of 1931 awards for this class of construction to June 1, to more than \$155,000,000. This includes only projects involving an expenditure of \$10,000 each and up, and omits those projects for which no accurate cost figures are available.

Miscellaneous construction enterprises hold second place for May awards, amounting to \$16,891,000. Included under this head are many construction and engineering undertakings not listed under other classifications.

Chemical Plants a Feature

Engineering and industrial projects in wide variety were projected or let to contract during May.

The outstanding project was a plant

estimated to cost upwards of \$10,000,000, for production of commercial chemicals, to be erected on a 350-acre site at Corpus Christi, Texas, by the Southern Alkali Corporation, New York, an affil-

Summary by Classification of Contracts Awarded and Proposed Work, May, 1931

	Contracts Awarded	Proposed Work
Apartment houses and hotels	\$3,844,000	\$710,000
Association and fraternal	910,000	715,000
Bank and office buildings	520,000	650,000
Church buildings	802,000	529,000
City, county, government and state projects	4,812,000	3,873,000
Dwellings, costing \$10,000 and over	3,389,000	971,000
Roads, paving and bridges	29,083,000	32,073,000
Miscellaneous	16,891,000	32,254,000
School buildings	4,988,000	4,230,000
Sewers, drainage and waterworks	3,148,000	11,981,000
Store buildings	660,000	452,000
Total for May, 1931..	\$69,047,000	\$88,438,000
Total for April, 1931..	88,884,000	97,502,000
Total for May, 1930..	75,023,500	129,561,500
Total for May, 1929..	105,506,500	169,178,000
Total for May, 1928..	82,129,500	
Total for May, 1927..	67,463,500	

ate of the Pittsburgh Plate Glass Co., Pittsburgh, Pa., and the American Cyanamid Co., New York.

Later in the month, a site was acquired near Wilmington, N. C., for a large plant for the extraction of bromine from sea water, to be erected by the Dow Chemical Company, Midland, Mich.

Another paper plant may be erected at Hodge, La., by the Southern Advance Bag & Paper Co., controlled by the Advance Bag & Paper interests of Maine.

The Champion Fibre Co., Canton, N. C., launched a five-year expansion program.

The Sylvania Industrial Corporation, Fredericksburg, Va., manufacturers of transparent cellulose paper, started work on a \$1,000,000 addition.

Grain Elevator Projects

The Shawnee Milling Co., Shawnee, Okla., let contract for a 300,000-bushel grain elevator addition.

The Burrus Panhandle Elevators, Amarillo, Texas, started work on a 500,000-bushel elevator addition.

The Kansas City Southern Railway, Kansas City, announced plans for 600,000-bushel elevator addition.

The Missouri Pacific Railroad, Kansas City, awarded contract for a 2,500,000-bushel addition to the Kansas-Missouri elevator.

The Kansas City Southern Elevator Co., Kansas City, announced plans for a 500,000-bushel grain storage annex.

The Unity Equity Co-operative Exchange, Enid, Okla., let contracts for a 420,000-bushel grain elevator.

The Fort Worth Elevators & Warehouse Co., Fort Worth, proposes a 660,000-bushel annex.

Ten grain elevator projects in Kansas City alone will provide 15,500,000 bushels additional storage, at an estimated construction cost of \$4,000,000.

Flood Control and Drainage

Work Goes Forward

Flood control work along the Mississippi River is being vigorously pushed

Outstanding Building, Industrial and Engineering Projects

REPRESENTATIVE major enterprises selected at random from construction news items published in May are included in the following tabulations. They reveal a diversity of construction and building operations under way and projected in practically every section of the territory from Maryland to Texas. The total investment involved in carrying to completion these 55 outstanding projects is over \$135,000,000; of this amount \$89,600,000 represents engineering and allied work, and \$46,000,000 represents building projects.

Private and Public Building Projects

Type of Project	Location	Cost	Promoted by	Status
Apartment Hotel	Louisville, Ky.	\$1,000,000	Roseland Holding Corp.	Contract let
Church	Baltimore, Md.	500,000	St. Joseph Monastery	Contract let
Federal Building Extensions	Houston, Texas	615,000	Treasury Department	Soon let contract
Federal Building	Key West, Fla.	525,000	Treasury Department	Bids, June 30
Hospital	Columbia, S. C.	1,300,000	U. S. Veterans Bureau	Site selected
Hospital	Houston, Texas	1,500,000	City and Harris County	Soon ask bids
Hospital	St. Louis, Mo.	1,200,000	Board of Public Service	Projected
Hospital	Springfield, Mo.	2,500,000	Department of Justice	Plans under way
Hospital	Huntington, W. Va.	700,000	U. S. Veterans Bureau	Bids, June 23
Hospital	Baltimore, Md.	2,400,000	Enoch Pratt Free Library	Start work soon
Library	Washington, D. C.	6,500,000	Library of Congress Annex	Finish plans in July
Library	Baltimore, Md.	600,000	Md. Grand Lodge of Masons	Contracts let
Masonic Home	St. Louis, Mo.	2,500,000	Frank Building Corp.	Projected
Office Building, 29-story	Laredo, Texas	650,000	William Epstein	Projected
Office Building	Washington, D. C.	500,000	American Pharmaceutical Asso.	Plans under way
Office Building	Washington, D. C.	865,000	Public Health Service	Plans under way
Office Building	St. Louis, Mo.	3,500,000	Boyer & Armstrong, etc.	Projected
Office Building	Richmond, Va.	1,000,000	Treasury Department	Projected
Parcel Post Building	Jackson, Miss.	1,000,000	Treasury Department	Architect selected
Post Office	Jacksonville, Fla.	2,000,000	Treasury Department	Plans under way
Post Office and Courthouse	Baton Rouge, La.	500,000	Treasury Department	Architect selected
Post Office	Washington, D. C.	500,000	Raymond T. Baker	Contract let
Residence	Stillwater, Okla.	525,000	Oklahoma A. & M. College	Plans completed
Stadium, Field House	Fort Worth, Texas	4,750,000	City, 5-year program	Bond election, June 24
School	Baltimore, Md.	700,000	City, Forest Park Jr. High	Contract let
School	New Orleans, La.	2,500,000	J. K. Feibleman Realty Co.	Under way
Store	Nashville, Tenn.	1,250,000	Warner Bros. Pictures, Inc.	Contracts let
Theatre and Office Building	Austin, Texas	4,000,000	University of Texas	Projected, 2-year program
University Buildings				

Industrial, Engineering and General Construction Projects

Type of Project	Location	Cost	Promoted by	Status
Bridge	Owensboro, Ky., to Rockport Ind.	\$5,000,000	Spencer County Bridge Comsn.	Contract let
Bridges	Louisiana	1,500,000	State Highway Commission	Open bids June 30
Central Heating Plant	Washington, D. C.	6,000,000	Treasury Department	Engineers selected
Chemical Plant	Corpus Christi, Texas	10,000,000	Southern Alkali Corp.	Site acquired
Chemical Plant	Wilmington, N. C.	2,000,000	Dow Chemical Co.	Site acquired
Dock Improvements	Lake Charles, La.	750,000	Dock Board	Soon let contracts
Dredges	Memphis, Tenn.	900,000	U. S. Engineer Office	Contracts let
Garment Plant and Textile Mill	Knoxville, Tenn.	2,000,000	D. & D. Mfg. Corp.	Projected
Gas Pipe Lines	Oklahoma	500,000	Western Service Corp.	Projected
Irrigation System	Brownsville, Texas	500,000	Cameron County Water Improvement District No. 3	Contracts let
Irrigation System	Raymondville, Texas	7,500,000	Willacy County Water Control & Improvement Dist. No. 1	Under way
Irrigation System	Brownsville, Texas	1,000,000	Cameron County Water Improvement Dist. No. 19	Bond election, June 16
Oil Pipe Line	East Texas to Gulf of Mexico	5,000,000	Shamrock Pipe Line Co.	Projected
Oil Pipe Line	East Texas to Mexia	1,000,000	Sinclair Pipe Line Co.	Under way
Oil Pipe Line	East Texas to Beaumont	2,500,000	Sun Pipe Line Co., etc.	Under way
Pumping Plant	Nashville, Tenn.	500,000	City of Nashville	Start work soon
Rail Line Revision	Fort Spring, W. Va.	1,200,000	Chesapeake & Ohio R. R.	Contracts let
Rail Line, 114-mile	Shamrock to Wellington, Texas	4,000,000	Ft. Worth & Denver No. Ry.	Projected
Railway Passenger Station	Oklahoma City, Okla.	5,000,000	Atchison, Topeka & Santa Fe Ry.	Projected
Railroad Equipment	Washington to New York	16,000,000	Pennsylvania R. R.	Contracts let
Rivers and Harbors Work	Missouri River	1,900,000	U. S. Engineer Office	Funds allotted
Sewer Improvements	Houston, Texas	1,000,000	City of Houston	Plans under way
Telephone Exchange	St. Louis, Mo.	1,860,000	Southwestern Bell Tel. Co.	Contracts let
Telegraph Improvements	Louisiana	500,000	Postal Telegraph Co., New Orleans	Projected
Terminal Warehouse	St. Louis, Mo.	3,100,000	Mid-West Indus. Dev. Co.	Projected
Transparent Paper Plant	Fredericksburg, Va.	1,000,000	Sylvania Industrial Corp.	Work started
Waterworks Facilities	Baltimore, Md.	7,500,000	City of Baltimore	Bonds voted

by the various United States engineer offices. During May, contracts were awarded for a vast amount of new levee construction, contraction works, dikes and so on.

The U. S. Engineer Office at Vicksburg, Miss., received bids June 10 for 13,388,000 cubic yards of earthwork in Mississippi, Arkansas and Louisiana. The same office will also let contracts

shortly for 37,700 feet of permeable pile dikes.

In May, the U. S. Engineer office at New Orleans received bids for 8,000,000 cubic yards of earthwork.

The U. S. Engineer Office at Memphis awarded contracts for two dredges, last month, to cost over \$900,000.

Contracts will be let this month by

the U. S. Engineer Office, New Orleans, for dredging in the Intracoastal Waterway in Texas and Louisiana, to total nearly 5,000,000 cubic yards.

The U. S. Engineer Office at Mobile will let contract soon for dredging 1,000,000 cubic yards of material in Mississippi Sound, Bay of Biloxi and Back Bay.

Atlanta Never Is Idle

By
GEORGE GARNER

INDICATIONS that Atlanta is participating in the worldwide business relaxation are not particularly impressive to visitors who sense the spirit of the city under the surface. The industrial and business quiet is accepted by Atlanta as a breathing spell after a busy session, a time of preparation for further work and an intermission for reinvigorating recreation. So it is that even now the people are preparing for a Centennial World's Fair and International Exposition in 1937, designed "to add materially to the resources not only of Atlanta, but also of the entire South," as M. D. Gleason, the World's Fair Commissioner, puts it.

In retrospect, Atlanta cites the expenditure of scores of millions of dollars in public works within the past decade, including more than \$20,000,000 rounded out by a bond issue voted in 1925 for school buildings, waterworks, the municipal hospital, three viaducts, a city hall, sewers and a sewage disposal plant. Such a volume of construction, of course, took a long time.

At the moment, it is putting the finishing touches to \$8,000,000 of public construction work.

For the future, it actually is preparing for a population of 1,000,000, by expanding the water supply, the sewer system and other facilities to care for at least that demand.

"Atlanta is resting—but, it is by no means idle," as Frank K. Shaw, secretary of the Chamber of Commerce industrial bureau, well expresses the situation.

For example, Mr. Shaw and his associates have obtained positive assurance from 18 substantial corporations that they will settle in the city as soon as may be practicable. The Industrial Bureau is busy in correspondence with nearly 500 other concerns which contemplate eventually establishing plants, or headquarters or branches in Atlanta.

"Don't you think we are justified and wise in preparing for a population of 1,000,000 within a comparatively short future?" Mr. Shaw very reasonably asks.

One hundred and fifty new industrial and commercial enterprises in 12 months, with an aggregate payroll over \$3,000,000, is regarded by Atlanta as merely reasonable progress in a generally quiet period.

So it is that Atlanta has expanded far

beyond the original city lines. Under a borough system, it now embraces East Point and College Park, Hapeville and Decatur and Avondale. Marietta and Jonesboro may be regarded as suburbs, and the official census population of 270,000 runs actually above 350,000. Estimating for the future on the record of the past, the city plans a sewer system to serve an area within a radius of 25 miles, with Five Points, the city's core, as the center. Natural gas service also has been introduced in recent times throughout the Atlanta area and Marietta.

Because of the diversity of its industries, Atlanta knows no stagnation. Activities may slacken in some plants of some kinds; but, many others, also, on equally as many lines, maintain a fair pace in the dulllest of days.

"Conservatively, we may say that 700 factories are turning out more than 1500 different articles," Mr. Shaw confides to the visitor.

Starting alphabetically at agricultural implements, the list runs through artificial limbs and artificial stone, automobile bodies and parts, brass, bronze, copper and similar products; railroad and other cars, chemicals, cotton goods, fertilizers, furniture, iron and steel works and rolling mills products; tires, structural ironwork, textile machinery and parts, wirework to woolen goods. More than 20,000 wage-earners normally are employed and their products approximate \$125,000,000 a year.

For the operation of the plants, Atlanta draws hydro-electric power from the foothills of the Blue Ridge Mountains; coal from Alabama, Tennessee and Kentucky; coke from local plants; oil from convenient points, and natural gas from the mains of the Southern Natural Gas Corporation, originating in the great fields of north Louisiana and distributed through the local gas company. Outside the Atlanta area, natural gas has been introduced in more than 20 cities and towns in Georgia, and is on the way to numerous other Georgia points.

Industry and wholesale and retail trade have been facilitated and promoted by the construction of viaducts over the railroad tracks in a valley which for years divided the city into two distinct parts. Uptown and downtown have been brought together, with tremendously beneficial results to manufacture and trade.

"Consider our wholesale trade in Atlanta," says Mr. Shaw, and goes deep into details.

The annual wholesale trade of Atlanta, it appears, approaches \$150,000,000, and more than 300 concerns of that nature are engaged entirely in the business. Their stock at inventory time is estimated at \$15,000,000. Counting all establishments that indulge in wholesale operations, the volume of business rises to more than \$350,000,000, with \$25,000,000 in stocks. About 300 such concerns are counted, in addition to the 300 wholesalers proper.

Wholesale food and tobacco products business runs to \$38,000,000 a year, and wholesale farm products, except dairy and poultry, to \$25,000,000. Hardware, electrical, plumbing and sporting goods wholesale houses aggregate \$15,000,000 in sales; machinery, equipment and supplies, except electrical, more than \$9,000,000—all these figures for regular wholesale traders, without taking the other 300 into account.

"Our retail business can be measured in volume, but it can't well be described in quality," Mr. Shaw continues.

On a basis of about 4000 retail stores, it is figured that the Atlanta retail trade runs over \$165,000,000 a year, with \$18,800,000 in inventory stocks. Unlike many other cities, the Atlanta food bill exceeds its automotive expenditures, \$32,000,000 going into the marketbasket each year and \$30,000,000 into autos, trucks, batteries, tires and accessories. The department and drygoods stores and notion shops ring up sales at \$26,000,000, and \$18,000,000 more is spent by the people for clothes, shoes, hats and other wearing apparel. Eleven million dollars is accounted for in furniture and housefurnishing sales.

Most recent of the great industrial plants opened in the city is the Kraft-Phenix Cheese Corporation building, erected at a cost of \$100,000, and the \$3,000,000 Dixie terminal of the United States Warehouse Company is another

new project. The Johnson-Fluker Company has put up a four-story factory for candy manufacturing, and the Georgia Power Company not long ago planned a 100,000-horsepower unit on the Chattahoochee River.

On recommendations framed after an exhaustive survey, the sewer expansion project contemplated 92.3 miles of intercepting sewers for sanitary wastes, this factor estimated to cost \$5,985,000. Two disposal plants were marked for discontinuance and a plant was designed on the Chattahoochee River to take care of the Peachtree Creek and Proctor Creek watersheds. Another plant was projected on South River and four smaller Imhoff tank treatment plants for lesser areas. The cost of this work was estimated at \$4,829,000, with nearly \$2,000,000 more for construction of storm water improvements.

To the observant visitor, however, the outstanding feature in Atlanta is the spirit of the people. Their confidence in Atlanta is unbounded. Their faith in the South is supreme. Their belief in the soundness of the United States is unshakable. So, they turn out a record crowd for the opening baseball game, they throng the theaters and the golf links—they enjoy life, instead of repining. Their 70,000 homes are enveloped in an atmosphere of cheer.

Institute of Public Affairs

Under the general title, "The New Industrialism in the South," many topics of importance and interest to this section will be considered at the Institute of Public Affairs at the University of Virginia, June 28 to July 11. The social significance of "The New Industrialism" will be considered on July 6, and labor's program on the following day. Child labor in the South and the place of women and children in Southern industry are scheduled for July 8, with power development, foreign trade and the South's place in national industrial preparedness on the three following days, respectively. Dean Charles G. Maphis is director of the Institute and Eleanor McKenney Gibson is secretary.

Bids on \$400,000 Prison Unit

El Paso, Tex.—Bids will be opened June 24 by the Department of Justice, Sanford Bates, director of the Bureau of Prisons, Washington, for construction of the first unit of a Federal house of detention near this city. The cost of the project, as ultimately planned, is estimated at \$800,000. Trost & Trost, El Paso, are the architects.

Western Union Building Completed in Florida

With the installation of equipment, which is now in progress, a new building recently completed at Jacksonville, Fla., for use of the Western Union Telegraph Company will be one of the most modern structures of its kind. The building was erected for Telfair Stockton & Co., Jacksonville, according to plans and specifications by Marsh & Saxelbye, local architects, and N. W. Green, engineer. The George D. Auchter Company, Jacksonville, was general contractor.

The building is 5 floors and full basement, 105 by 95 feet, of concrete frame construction, with architectural terra cotta on two street elevations and common brick on two rear elevations. The building presents a striking appearance because of architectural features and treatment of the terra cotta. All concrete was mixed in a central plant and hauled to the job, being placed at night in order to take advantage of reduced traffic congestion. This method resulted in rapid progress and higher unit strength of the concrete, it is said, as water was not evaporated as rapidly as when concrete is placed under the mid-day sun. Exterior wall masonry was set from outside suspended scaffolds. The building was delivered to the owner 50

calendar days ahead of contract requirements.

With exception of four stores on the first floor, the entire building has been leased to the telegraph company, which will make it the central operating unit for Jacksonville and Florida. The following sub-contracts were awarded:

Concrete—Central Concrete Engineering Co., Jacksonville

Reinforcing steel and steel sash—Truscon Steel Co., Youngstown, Ohio

Masonry materials—Columbus Brick & Tile Co., Jacksonville

Millwork—Schell-Sasse Manufacturing Co., Jacksonville

Marble, tile and terrazzo—Steward-Mellon Company of Jacksonville

Glass, store fronts and painting materials—Pittsburgh Plate Glass Co., Pittsburgh, Pa.

Finish hardware—Smedley & Rogers Hardware Co., Jacksonville

Plastering—John S. Graham, Jacksonville

Roofing and sheet metal—William Culver, Jacksonville

Terra cotta—Atlanta Terra Cotta Co., East Point, Ga.

Plumbing and heating—Walter Denson, Jacksonville

Electric wiring and fixtures—American Electric Company, Inc., Chicago

Elevators—Otis Elevator Co., New York

Hollow metal windows, tin-clad and kalamain doors—Moeschl-Edwards Corrugating Company, Inc., Cincinnati, Ohio, factory at Covington, Ky.

Steel frames, bucks, etc.—Metal Door & Trim Co., La Porte, Ind.



New Structure for Telegraph Company at Jacksonville

Southern Railway Completes Important

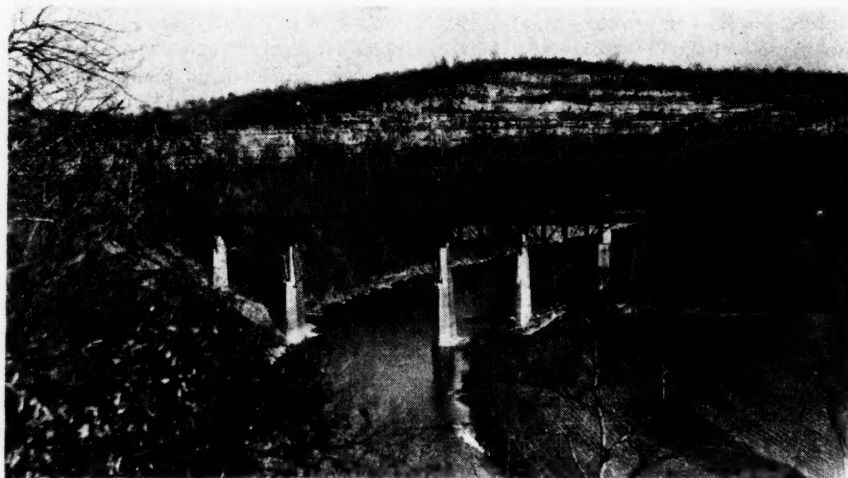
Bridge

Program

New truss spans on Cumberland River bridge at Burnside, Ky., designed to carry the latest type of heavy locomotive.

THREE single track deck truss spans have been renewed at Burnside, Ky., on the Cumberland River bridge of the Cincinnati, New Orleans and Texas Pacific Railway, which is the Cincinnati-Chattanooga line of the Southern Railway System. The old truss spans were built in 1896, designed for 40,000-pound axle loads; the new spans are designed for 65,000 pounds and will carry safely any locomotive in the United States, it is said. The bridge is 1340 feet long, consisting of 755 feet of steel viaduct at the south end and, until recently, 585 feet of truss span leading almost immediately to Tunnel No. 4 at the north end. The track is nearly 160 feet above water at ordinary low stage. Work recently completed involved the erection of a truss span 196 feet, 10 inches, long over the river; and four girder spans, each 99 feet long, replacing three truss spans, each 195 feet long; constructing two new concrete piers and making alterations to previously existing masonry.

Renewal work was carried on under difficulties. The south end of the tunnel is some 60 feet north of the bridge, with rock bank rising over the tunnel to a point 130 feet above the rail. The gorge of the river is 1000 feet wide and 300 feet deep. A short distance below the



At This Stage of Construction the New Girders Were Resting on Falsework Brackets

bridge the banks are cut by two streams, South Fork and Pitman Creek. The river is subject to floods which rise and fall rapidly, making it dangerous to rely on falsework placed on the rocky bed. Normal traffic density is about 30 trains in a 10-hour working day, passenger trains and manifest freights being so scheduled over the bridge during daylight hours as to leave little time for erection work. The new steel spans were erected alongside the old spans on temporary brackets secured to the masonry piers on the downstream side. Similar steel brackets were placed on the upstream side to receive the old spans.



Looking Into Tunnel No. 4

When a new span was completed it was connected to the span it was to replace and the two were rolled simultaneously, the new to its permanent position and the old steel to the waiting bracket on which it rested until dismantled.

While rolling operations were considered by the engineers to be quite simple, many difficulties had to be overcome in erecting steel on so few supports, in keeping loads properly braced, and in providing clearances for old and new steel and masonry. The new middle truss span was erected with only two brackets at each pier. To roll a truss span out and replace it with two girder spans presented another difficulty since the new pier had to be built inside the old truss span and around many of its members. However, it was possible to burn away interfering steel parts and to leave each half span with strength enough to support itself and deck during the rolling operation and to move the old span out with rollers placed under its center floor beam. During one of these operations six torches were used continuously for nearly an hour and a half, burning over 40 members, some of these being two inches thick. Traffic was interrupted from two to three hours while the end spans were being moved but the center span was handled in a little more than an hour. Actual rolling took two to four minutes, the remainder of the time being required for preparation and track work after the new spans were in place.

Masonry work was handled by Millsap & Parker, Birmingham, Ala., and steel work by the Mount Vernon Bridge Co.,

Mount Vernon, Ohio, in accord with plans developed by the office of G. H. Gilbert, bridge engineer of lines West, and carried out under its supervision. Assistant Engineer James Kelly and B&B Supervisor John F. Barron were in local charge of the work.

This structure does away with the last steel bridge span of light design on the Southern's Cincinnati-Chattanooga line, such spans requiring speed restriction for operation of heavy Mikado type engines. Some 30 years ago decision was reached to make necessary renewals with bridge spans good for a loading equivalent to heavy Mikado type engines. Between Cincinnati and Chattanooga there are 97 steel and masonry structures, of which 49 steel bridges contain over 45,000 tons of steel and comprise nearly three miles of double track and two miles of single track.

\$2,000,000 CHEMICAL PLANT

Will Produce Industrial Chemicals and Operate in Connection With Gas and Oil Refinery

Tulsa, Okla.—The \$2,000,000 chemical plant at West Tulsa being erected by the Texaco Salt Products Co. is expected to be in operation by the last of June. The new enterprise will be one of the outstanding industrial developments in Tulsa, with a big daily production capacity of chemicals of a type largely used in industry. Five large special evaporators are under construction, which will employ the Martin process developed by Dr. Otto V. Martin, who will be in charge of operations.

The Texaco Salt Products Company's plant occupies a 40-acre tract adjoining the Texas Company's refinery. Major units include the evaporators, 40 feet above ground, roofed with redwood. Concrete basins are sunk 20 feet below ground and lined with rust-resisting metal. The Martin process utilizes latent heat from the refinery to evaporate salt brines for the extraction of chemicals, then cool the brine and return it to the oil refinery where it may be used to cool gasoline condensers. The brine thus takes the place of water to condense the gasoline from a vapor to a liquid, solving largely the problem of cost on one hand and the possibility of water not being suited to the needs of the refinery. Brine heated at the refinery is sent into pipes lining the walls of the evaporators and is sprayed into the concrete settling basins where chemicals are extracted. Laboratory work is carried on at the plant.

Southern Mountains Lure Summer Vacationists

A RECENT editorial in the Charlotte Observer, under the heading "The Verdant Hills," makes one long to take to the open road and head for the mountain country. The Observer thus describes the Western Carolina mountain region which has "never looked more beautiful":

"The prospect that pleases is the carpeting of green that has been spread over hills and valleys to the obliteration of the bare spots, so profuse being the grass and leafage that the only appearance of bare ground is in the newly-plowed fields. It is a beautiful sight, not only in farm and garden, but in orchards, for the trees are giving promise of a yield to match that of the fields the outlook being for the biggest apple crop ever known in the mountains—a crop to match in abundance that of the peach orchards in the sandhills, this because the spring season dealt more kindly with all out of doors than has been known in many years. Just now the first detail of early summer's harvesting is being attended to in stripping the cherry trees of their burdens, the cherries having come after the strawberries and with blackberries coming on—and the people are diligent in gathering. At Iron Station a whole family of father, mother, three boys and two girls, were seen 'checking out' three cherry trees, sufficient to make pies and jam and bounce for the whole neighborhood, and then some to bring to town. It is about two miles out from Newton, if we recollect aright, that the truck farm is located, from which this season a crop of the biggest strawberries known in the United States, even beating the Imperial Valley product was gathered.

"Through the lower Piedmont counties up to where the ground begins to take an upward turn, the wheat crop has been taken off the fields and the clover is coming up to take the place of wheat, to perpetuation of the verdant in the landscape, and a little further up comes the oats and the rye and the hay crops that cover the face of the earth, sweeping up from the valleys and covering the cleared sections of the mountain slopes to the very tops. Grass everywhere and by far too few cattle to eat it. The opportunity for populating the mountain farms with cattle was never more inviting than it is this year. Of particular remark is absence of any sign of erosion on the farms, even the great scar on the cliffside to the west at the elevated six-mile bow turn to Blowing Rock, which a couple of years ago figured in the National Geographic as a horrid example of erosion, having disappeared under covering of grass, pines and spruce.

"If ever there was a land of milk and honey, it is this season suggested in the

appearance of the mountain regions of North Carolina, the finishing touch in perfection being evidenced in modernization of the homes and beautification of surroundings by grass and shrubs, flowers and shade. The mountain people of today live in homes that match the beauty of the landscape.

"In all sections of the mountains the people are 'set' for advent of the real age of the tourist, for the fame of the good roads has been quite firmly established and the tide is setting this way. The map issued by Secretary of the Interior Wilbur marking out the Park-to-Park Highway, has already brought an advance guard of motorists, and the publicity given the Capital Parkway is starting a flood of tourist travel over that route. For the moment, the Tennessee side of the Smoky Mountains National Park is the better known, because Tennessee was there first with the roads, but some of the tourists negotiate the unimproved 10-mile section into Smoke-mount and get into North Carolina, a party of invaders of the kind having got as far as Little Switzerland Inn, last Sunday, fairly exuding enthusiasm over the scenic splendors of North Carolina, and they had seen but a part of it.

"North Wilkesboro is the only town in the state that is located like the hub to a wagon wheel. The circle is almost perfect, with Two Oaks at the top, near the Virginia line, Brooks Cross Roads on the east, Conover on the south and Boone on the west.

"It was 20 years ago that Hugh McRae turned over the famous Yonahlossee Turnpike, between Blowing Rock and Linville, to the state, and this season for the first time tourists may travel that route in comfort, for it is hard-surfaced all the way, though the nine miles from the Watauga line to Linville, past the home of Sandy McRae, the Scotsman, has not been given the tar treatment. The roadway, however, is finely packed down and is in good shape. The old turnpike route is the chief attraction on the Capital Parkway, set with mammoth boulders, traversing the noblest spruce forest outside of Washington State and revealing a wider stretch of mountain ranges and peaks than any other road in the State, with Blowing Rock as the hotel de luxe center, and Spencer's Green Park Hotel, Donald Boyden's Blowing Rock Hotel and Mrs. Martin's famed Inn, Mayview Manor up on the heights, and 10 miles away Boone, capital of Watauga.

"This is just a bit of hop, skipping and jumping here and there over the mountain sections. Inspiration of like kind is to be found in any direction the traveler may elect to take, and the glory of travel in North Carolina is that now one may journey in any direction the fancy may dictate. The beauty of it grows with each recurring trip."

Efficiency With American Coals

COAL is one branch of American industry which is frequently considered as having failed to keep pace with the march of progress. It is not my purpose to defend American coal producers, because I do not think they need defense. There are undoubtedly many principles of sound business which are sadly lacking in the conduct of the coal business in the United States, but there are good and sufficient reasons for this situation, and the more fortunate and more progressive industries would probably be hampered by the same shortcomings if they were forced to operate under the same conditions.

After all, the principal failure of the American coal producer has been in his duty to himself and his stockholders, rather than in his duty to the industrial consumer. It is my purpose to discuss the efficiency with which American coals are being used in modern industrial plants. This necessarily carries with it a discussion of the contributions made by the coal industry, itself, toward the efficient use of its product.

There are three fundamental factors vitally affecting the efficient use of coal: (1) Equipment, its type, design, condition and method of operation; (2) Coal, its size, quality and burning characteristics; (3) Methods of marketing and purchasing.

Thirty years ago the coal industry and business, in every phase, were conducted in careless fashion. Then came the engineer, the technician, the scientific manager and the efficiency expert. These new sciences appealed to American industry, and industrial efficiency found its inception in the haphazard methods of the times.

Industrial efficiency found fertile soil in the boiler room, just the same as in every other phase of industrial management. With the possibility of using a waste product, automatic stokers were designed and developed for burning fine coal, and improvements and refinements have been very rapid. Pre-heated air, water-cooled sidewalls, furnace linings, combustion arches, high boiler setting, induced draft, super-heaters, all added their part to the general efficiency of the industrial steam plant. Competition and engineering progress developed new and improved equipment for all special processes involving the use of coal.

The accompanying article is a condensation of an address made by H. A. Glover before the National Association of Purchasing Agents Convention June 9 at Toronto, Canada. Mr. Glover is general manager of sales of the Consolidation Coal Company, New York, and chairman, Committee of Ten, Coal and Heating Industries.

With these developments came increased knowledge of combustion, and with increased knowledge of combustion has come increased knowledge of coal and a more intimate acquaintance with the burning characteristics and action of different coals under different burning conditions. We have learned the value of proper sizing and of uniformity; we have learned that coal of the lowest ash content and the highest heating value is not necessarily the most efficient coal. We have learned that coal selection and adaptation have much more bearing on efficiency than inherent heat value, and that proper sizing enhances the efficiency to a greater extent than the last 1 per cent or 2 per cent lower ash, with its higher inherent heat value. We have learned that proper sizing compensates for lower fusing point of ash to a considerable extent. We have learned that, instead of just buying coal, the modern purchasing agent must select his fuel with the greatest care and with a high order of technical knowledge of his plant and the burning characteristics of the coal required for efficient operation.

In fact, I venture to say the proper selection and purchasing of coal today is one of the most exacting, technical and difficult tasks confronting the mod-

ern purchasing agent. I might have said "scientific," but I purposely avoided the use of this term as applied to coal buying for fear you might interpret it as meaning buying from analyses.

Even today, we have many hand-fired plants, with boilers set low and operating with correspondingly low efficiencies. However, practically all large industrial consumers handle coal and ashes automatically, keep accurate statistics of performance, evaporation, amount of steam generated, cost per thousand pounds of steam and cost of furnace and equipment maintenance. Boilers are operated as high as 550 per cent rating, and coal is burned at the highest possible rate per square foot of grate surface—in some cases, 70 pounds per square foot. All of these factors help to bring the over-all efficiency of the modern high-pressure steam plant to a range of 75 per cent to 85 per cent. Thus, we have seen a practically complete evolution in coal mining, preparation, sizing, selection, application and burning, as well as in the general knowledge of coal and its utilization. The American coal producer has been forced to change his attitude toward his business, just as the purchasing agent has been forced to adopt new and more modern methods. The producer has learned that a knowledge of his coals and efficiency in the use of his coals are essential to the success of his business.

Combustion engineering is as vital to the coal producer today as mining engineering. Our present American coal mines are largely mechanical. Our operating problems, with the possible exception of labor relations, are highly developed, both as to productivity and efficiency. The American producer has been forced to devote the major portion of his effort to the marketing of coal; for, just as the purchasing of coal has become a highly technical problem, so has the marketing. The coal producer today knows that, regardless of quality, burning characteristics, selling prices or analyses of his coals, there are some purposes for which his coals either are now adapted or can be made adaptable by proper sizing. He knows there is no such thing as an "all-purpose" coal. He knows there is no such thing as a piece of equipment which will handle any coal with high efficiency. He knows that

every coal either is now or can be made an efficient fuel for some types of equipment. His problem is to seek out those applications.

The modern purchasing agent knows, regardless of the type or condition of his equipment, there are some coals which will operate efficiently and some which will not, even though the latter may be of better quality than the favored coals.

Thus, the lines and problems and the necessary knowledge of the purchasing agent and the coal producer converge. The modern, up-to-date, progressive coal operator in the United States must of necessity have an intimate knowledge of the problems confronting the purchasing agent. Lacking the time, inclination or technical knowledge, the purchasing agent can select a high-grade, reliable American producer and place the responsibility on him for obtaining boiler room efficiency in his plant. Many forward-looking purchasing agents place the responsibility on a reliable coal producer for supplying coal and guaranteeing economical operation.

The modern coal operator has long since learned the value of uniformity of product. Underground control methods have been installed to prevent radical fluctuations in quality as the coal comes out of the ground. Methods of shooting, loading and developing underground territory all receive closest attention and supervision, with a view to mining and loading a product needed by industrial consumers to obtain present day efficiencies.

It is very common today for a coal mine to make as many as 21 sizes. This trend toward multiplicity has given rise to a serious tendency on the part of individual operators to establish their own individual sizes, rather than standard sizes. The result is almost chaos. This is one of the big problems confronting the operator. It must be solved. There must be a standardization of sizes, at least within certain producing districts.

The automatic stoker was originally designed to burn practically waste sizes of coal. The tremendous demand for these small sizes has further complicated the operating and marketing problems of the producer. Many mines have installed crushers or breakers, in order to guarantee a uniform supply of small sizes throughout the year; the law of supply and demand will force these sizes to bring a price commensurate with their value in the industrial market. Experience has proved that a uniformly sized coal, no matter how small, will justify a price commensurate with its value, as against ordinary slacks and nut-slacks. Many efficient plants are now burning sized coal, even on stokers.

While the more economically operated

seams of the highest grade coals are being rapidly depleted, the American producer has maintained and even improved the quality of his coal. There has been an elimination of many mines producing inferior coals. Many other mines with inherent defects in the seam have installed cleaning plants for mechanical removal of impurities. Many others have installed cleaning plants to prepare their coals for a special process. Others have installed cleaning plants because mechanical cleaning is less expensive than manual cleaning.

Millions of dollars have been spent for equipment at the American mines to prepare coals for every conceivable use. In co-operation with the railroads, the American producer has so stabilized his service as to avoid the necessity for storing large quantities of coal against interruptions of supply and contingencies of transportation. Many consumers have ceased to exercise even ordinary precautions in protection of their coal supplies. All of these things are a part of the American coal producer's contribution toward increased efficiency in the industrial plant.

But, while the majority of the larger consumers, through technical assistance and years of study and experience, have reached a high point of efficiency in selection and utilization of American coals, the smaller industrial consumers have not made much progress in this direction, except in the past very few years. The American coal producer has been actively engaged in research work in connection with these smaller units, developing the proper size and grade of fuel and obtaining accurate information along these lines.

I say without fear of successful contradiction that astounding progress has been made in the efficient use of American coals in industry. The American producer has contributed his full share in obtaining these results. Instead of being natural antagonists, the coal producer and the purchasing agent have very much in common, and I believe that the Coal Committee of the National Association of Purchasing Agents and the National Coal Association, working in harmony, will not only improve efficiency in the use of coal, but also strengthen the spirit of co-operation.

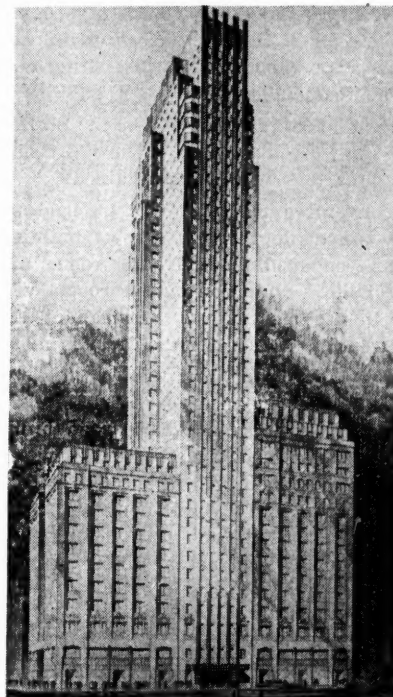
Hosiery Mill Addition

Asheboro, N. C.—Contract is expected to be awarded soon for an addition to the plant of the Asheboro Hosiery Mill which will double the floor space of the company. The addition will be 185 by 60.8 feet, 2 stories and basement, to house 200 knitting machines which have

already been purchased. The mill has been operating full time for several months. Upon the completion of the addition and the installation of machinery, the total number of knitting machines in the plant will be 822 and the number of employees will be increased to 500.

40-Story St. Louis Building

New York and Pittsburgh interests, represented in St. Louis by Boyer & Armstrong, architects, are negotiating for the purchase of the half block east of Broadway, between Pine and Olive streets, on which it is planned to erect a 40-story building at cost of \$2,500,000. The property is owned by the Mercantile-Commerce Bank and Trust Company



New \$2,500,000 Structure Planned for St. Louis, Mo.

and contains the 11-story building of that company, as well as the 16-story Federal Commerce Trust building. Tentative plans call for construction of the new building between the 11-story and 16-story building, connecting and remodeling the two structures. The new building in its entirety will cover the western half of the block, fronting 232 feet on Broadway and 127 feet on Olive and Pine streets. One setback story is to be added to the Bank of Commerce building, making it 12 stories, while the mansard roof of the Federal Commerce Trust building is to be removed and the two stories it contains made into setbacks.

DETROIT GETS ROAD SHOW

American Road Builders' Association
Selects 1932 Meeting Place

The 29th annual Convention and Road Show of the American Road Builders' Association will be held in Detroit, January 9 to 15, 1932. Several large cities made strong efforts to get the show.

The Detroit Airport building will be used for both the convention and the road show. All exhibit space is on the ground floor and the huge doors make possible the setting of the largest equipment without difficulty.

A new plan of housing the delegates will be followed for next year. An effort will be made to provide accommodations for all road builders whose interests are alike in the same hotel, with city people in one hotel, county delegates in another, Pan-American in still another and so on through the list.

Headquarters hotels will be the Statler and the Book-Cadillac. Here division headquarters will be maintained.

Convention meetings will be held on the second floor of the airport building where commodious and quiet rooms are available. Four convention rooms will be in use continuously throughout the convention to care for the division meetings.

The event in past years has brought together as many as 25,000 road builders representing all classes of activities. Indications are that this number will be exceeded at the Detroit convention, for delegates will include state, county and city officials, contractors, highway engineers, manufacturers and distributors. The purpose of the event is to present new developments in methods, materials and machines for road and street work and to provide an opportunity for road builders to inspect and compare the new developments in equipment and road materials.

Wood Preserving Plant Increasing Output

Augusta, Ga.—Due to an increased demand for ZMA (zinc, meta, arsenite) pressure treated pine lumber, the Piedmont Wood Preserving Company, New York, with a treating plant here, is rearranging its entire plant lay-out to increase capacity. All pumps, pipes and other equipment are being replaced with the most modern and efficient equipment obtainable and lumber sheds are being constructed to facilitate the seasoning of the finished product. Plans are also

being made for the addition of more pressure treating cylinders whenever they may be required. The Curtin-Howe Corporation, New York, is supervising the improvements and orders for equipment have been placed.

The ZMA treatment is designed to protect wood against destroying rot, termites, etc., yet leaving it to all appearances in its natural state—clean, odorless, colorless and paintable. E. F. Conger, Staunton, Va., is the owner of the Piedmont Wood Preserving Company, and his brother, A. F. Conger is in charge of the plant here. Southern sales are handled by A. F. Conger, George H. Roberts of the Bright Brooks Lumber Co., Charlotte, N. C., and G. E. Shand,

Jr., Columbia, S. C. Northern and Eastern sales are handled by Fred B. Mewhinney, 50 Church street, New York.

Bids on \$700,000 Hospital

Huntington, W. Va.—The United States Veterans Bureau, Washington, opens bids June 23 to construct buildings and utilities, including roads, walks, grading and drainage for a \$700,000 U. S. Veterans Hospital here. W. S. Rosenheim, managing director of the Huntington Chamber of Commerce, announces that the Chamber will supply contractors intending to bid on the project all information as to building materials, subcontractors, etc.

Progress in Southern Paper Making

IN the May issue of "The Log of the Lab," published by the United States Forest Products Laboratory maintained at Madison, Wis., in cooperation with the University of Wisconsin, there is outlined the progress being made toward utilizing new pulpwoods and wood pulps. The suitability of Southern woods for pulp and paper making is stressed. The report shows that from a technical standpoint not only newsprint but a variety of other light-colored papers can be and have been made from Southern woods on a laboratory scale. How soon these products can be manufactured commercially depends on the extent to which laboratory results are tied in with the economic trend and with the daily grind of mill practice. In further comment on the possible future development of the South's pulp and paper industry as a result of research, the Forest Products Laboratory says:

"At present the Southern pulp industry is concerned mainly with brown sulphate or kraft, a strong pulp excellent for wrapping papers, containers and similar uses. This is a big consumption field, but for economic reasons it is desirable that Southern pulp products should be more diversified.

"The same principle applies to pulpwoods. Throughout the country comparatively few species are now used in pulp and paper production. Undue restriction of species, either through prejudice or lack of technical knowledge, is unsound practice. The sources of pulp should be consistently broadened and diversified if we are to develop and maintain national independence in pulp and paper production.

"Seeking to develop facts in line with these basic principles, the Forest Products Laboratory from time to time has put forth findings pointing to the use of new species for pulp and to improve utilization of species now in common use. In important instances this has

required consideration of species on a regional basis. For example, intensive investigations are in progress on Western and on Southern woods. The latter have now been under way long enough to develop information of special interest. Some of the findings are the following:

"Production of strong white sulphate pulp from Southern pines, a high-grade and very useful paper-making material developed through improved cooking and bleaching methods. This product is of particular interest to the established kraft industry.

"Book paper from Southern pines and gums, a process involving two-stage bleaching. This is now in commercial production in certain Southern mills. Two-stage methods of bleaching have been extended to many other types of pulps in the North and West as well as in the South.

"Production of sulphite and groundwood pulps from young slash pine. Satisfactory newsprint papers have been made at the Laboratory by combining these pulps in proper proportions. This development is noteworthy, as heretofore the Southern pines, because of their resinous character and high percentage of heartwood, have not been considered suitable for sulphite or groundwood pulps. However, as recently pointed out by Dr. C. H. Herty, a specialist in Southern forestry matters, young slash pine is practically free from heartwood and is low in resin. Moreover there is an abundance of this species coming in as second growth on the cut-over forest lands of the South. Special acknowledgement is due to Dr. Herty for his contribution in this connection.

"Sulphite, groundwood and semi-chemical pulps from black gum or other hardwoods, valuable as filler for newsprint and book papers. 'Black' gum happens to be among the whitest of all known woods and requires little or no bleaching according to its use.

"Particulars of these or other processes and samples of the products will be furnished by the Laboratory to interested individuals and industrial or commercial groups on request."

Surveying for Seaport at Brownsville, Texas

UNITED STATES engineers have started work on surveys of the nation's newest seaport, Brownsville, Texas, and expect to be ready to award initial contracts on this \$6,000,000 project probably in August or September. Its importance is emphasized by its international location, with strong probabilities that a great amount of commerce from and into Northern Mexico will move through this new port.

Construction work will include the dredging of a channel from Brazos-Santiago Pass on the coast to Brownsville, a distance of 17 miles; the dredging of the pass through Brazos-Santiago; and extension of the jetties another 1000 feet into the Gulf on each side of the pass. To finance this work the Federal Government recently authorized an appropriation of \$2,358,000. The Brownsville Navigation district has voted \$3,500,000 in bonds to finance its part of the work.

Only \$2,175,000 of the Brownsville Navigation district funds will be required for actual port construction; most of the remainder will be used for building docks, terminals and other port facilities, so the new port will be able to open without handicap in any way.

The channel from the pass to Brownsville will be 25 feet deep, 100 feet wide at the bottom, and 300 feet wide at the top.

Survey work to determine the exact amount of dredging and other construction required was started in April by a force of engineers from the office of Milo P. Fox, district engineer at Galveston, following action of the Brownsville Navigation District in making the initial payment to army engineers.

The survey party is in charge of T. W. Foreman, associate engineer of the Galveston office. Mr. Foreman was in charge of construction work on the Brownsville project three years ago, when it had only an experimental status. At that time jetties were built from Padre Island on the north side of the pass, and Brazos Island on the south, for a distance of approximately 1500 feet into the Gulf. There was about six feet of water over the bar in the pass.

Since then the action of the water, in going up the Laguna Madre, a long neck of salt water formed by Padre

By
JOHN GREGG

Chairman,
Brownsville Navigation District

Island and the mainland, and coming back into the Gulf, has scoured the pass to a depth of 17 feet. Little difficulty is anticipated in securing a depth of 25 feet through the pass and maintaining it, in view of this scouring, which engineers said is a very favorable result of the jetty construction. The jetties are to be extended another 1000 feet.

Construction will include the dredging of a 1000-foot square turning basin near Brownsville.

The jetties were built by placing large rocks around piling on which a railway track was constructed. About 1,000 feet of the track on the Padre Island side has been washed away and must be rebuilt, otherwise the jetties are in good shape. Material for construction is carried across the Laguna Madre by barge and boat.

The launching of initial operations marks a victory for the people of South Texas in their determined fight for deep water waged for many years. As far back as 1854 United States army engineers surveyed the seacoast in this section and passed favorably on it. Since then there have been many reports and surveys, and for a time, until the latter part of the last century, all commodities for this section and northern Mexico were brought in by boat, either up the Rio Grande to Brownsville, or into the Laguna Madre and to Brownsville by rail.

In recent years, when the Lower Rio Grande Valley began to develop into one of the leading citrus and vegetable producing areas of the world, and when trade with Mexico began to take on promise of new activity, the agitation for deep water here was revived, resulting in another survey by Federal engineers and a favorable report, after which Congress adopted the Brownsville port project with authorization of an appropriation of \$2,358,000 for construction. It also authorized an appropriation of \$150,000 annually for permanent maintenance.

Meanwhile the Brownsville Navigation district was organized, and local men active in the port work were named as commissioners. The District now has as commissioners: John G. Fernandez, Brownsville banker; Z. A. Rosenthal, city manager of Brownsville, and the present writer as chairman. While the engineers are completing surveys, and preparations for the contract award and actual construction are going forward, members of the commission are preparing to direct commerce of Northern Mexico, and of the Lower Rio Grande Valley of Texas, through the new port of Brownsville.

Establishment of a number of industries as a result of the port develop-



A Segment of Brownsville
From the Air

ment is considered practically certain. Owners of large mines in the Monterey, Mexico, section have expressed themselves in favor of building smelters in the Brownsville section, so they can roll the crude ore from the mines, bring it in with very little duty, and then turn out the finished product and ship it by boat, with lower transportation costs.

Construction of fast barges, to handle citrus fruit and vegetables of the Valley, taking the products to seaports along the Atlantic coast, is also planned. Another source of tonnage for the port is expected to be oil from northern Mexico, and from points along the Rio Grande in Texas. A number of wells have been brought in on both sides of the river, indicating that a great field may be developed within a radius of 150 miles of Brownsville. The ground is said to slope from the region of these wells all the way to Brownsville, so that flow through pipelines would be by gravity.

Recently the entire board of United States Army Engineers visited the Brownsville port site, and inspected it.



Jetty of Brownsville Port at Brazos-Santiago Pass

Major Milo P. Fox, district engineer, was particularly impressed with the fact that the Brownsville Navigation District had secured a quarter-mile right of way on

each side of its channel, to permit developments along the right of way in future without the necessity of purchasing more land.

EAST COAST CANAL PROGRESS

6,800,000 Cubic Yards Dredged and
\$1,200,000 Expended

Jacksonville, Fla.—Col. L. V. Frazier, United States District Engineer, announces that government engineers will complete the East Coast canal project by November. More than 6,800,000 cubic yards of material had been dredged from the canal up to May 1, it is said, and approximately \$1,200,000 had been expended. The canal has been dredged for 130 miles to full dimensions of 100 feet in width and 8 feet deep at mean low water, and when it is finally completed 175 miles will have been dredged to these specifications. The full length of the canal, which extends from Jacksonville to Miami, is 360 miles. In addition to dredging activities, nearly 125,000 snags and obstructions have been removed.

A private enterprise from 1888 to 1912, when the Government took it over for maintenance, the canal was put under active control of the Federal Government by authority of the Rivers and Harbors Act of 1920, largely through the efforts of Col. Gilbert A. Youngblood, who was then the United States District Engineer at Jacksonville and now conducting a private practice here. To facilitate development of the waterway, the Florida Inland Navigation District,

a special taxing area, was organized and from a bond issue of \$1,887,000 it purchased the canal and rights-of-way for improvement and formally transferred the property to the United States Government early in 1930. The delivery of the canal assured the expenditure of \$4,125,000 for deepening and widening it and an annual expenditure of \$125,000 for maintenance. Work on the project began in January, 1930, and the first dredge began operations at Pablo Creek in March of last year.

Electric Systems Connected

Joplin, Mo.—The Empire District Electric Co. of this city, which acquired the holdings of the Ozark Utilities Co., serving a territory to the north and west of Springfield, Mo., has completed a connection with the latter's lines. To effect the connection, the Empire tapped its new Springfield-Sedalia power line east of Bolivar and extended a line to Bolivar feeding into the Ozark Utilities system. At the point at which the Springfield-Sedalia line was tapped, a new 66,000-volt transformer station was built to house three transformers. The tie-in with the Ozark company will unify the Empire properties and is expected to effect economies in operation. An abundance of water makes it possible to utilize the full output of the two Ozark hydro-electric plants at Bowers Mill and Caplinger Mills.

\$3,500,000 NARCOTIC FARM

Government Selects Fort Worth Site
for Big Project

Fort Worth, Tex.—Property offered the United States Government by the Fort Worth Chamber of Commerce has been selected for a new Federal Narcotic Farm, estimated to cost from \$3,000,000 to \$3,500,000. The new farm will be designed to accommodate about 1000 narcotic addicts from Federal prisons west of the Mississippi River, with facilities for others who may volunteer for treatment. It will be located in Tarrant County, 6½ miles from the Fort Worth city limits. The selection was made by authority of an Act of Congress, which contemplates the establishment of two United States Narcotic Farms for the confinement and treatment of persons addicted to the use of habit-forming narcotic drugs. A site for the first was selected at Lexington, Ky.

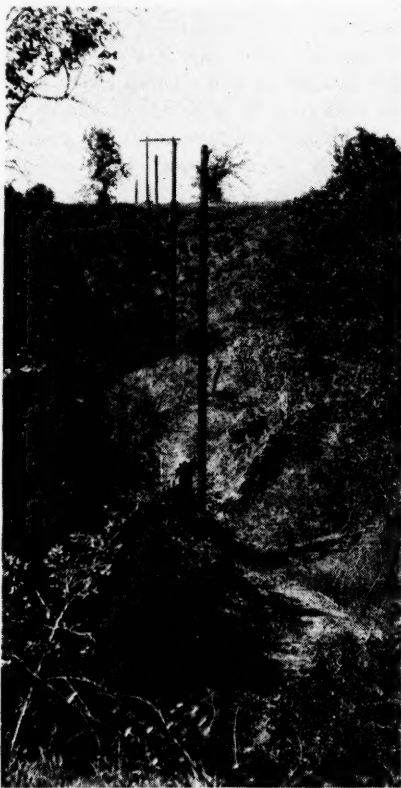
10-Story Office Building

Tyler, Tex.—A site has been purchased by the People's National Bank here for a bank and office building of eight or ten stories, according to Sam R. Greer, president. Work on the new structure is expected to begin within a short time with a view to completing it by the fall.

80-Mile Oil Pipeline Built in 23½ Days

THE Continental Pipe Line Company, transporting subsidiary of the Continental Oil Company, has completed an 8-inch crude oil line, originating in the Oklahoma City field and terminating at the company's pipe line station 14 miles from Ponca City.

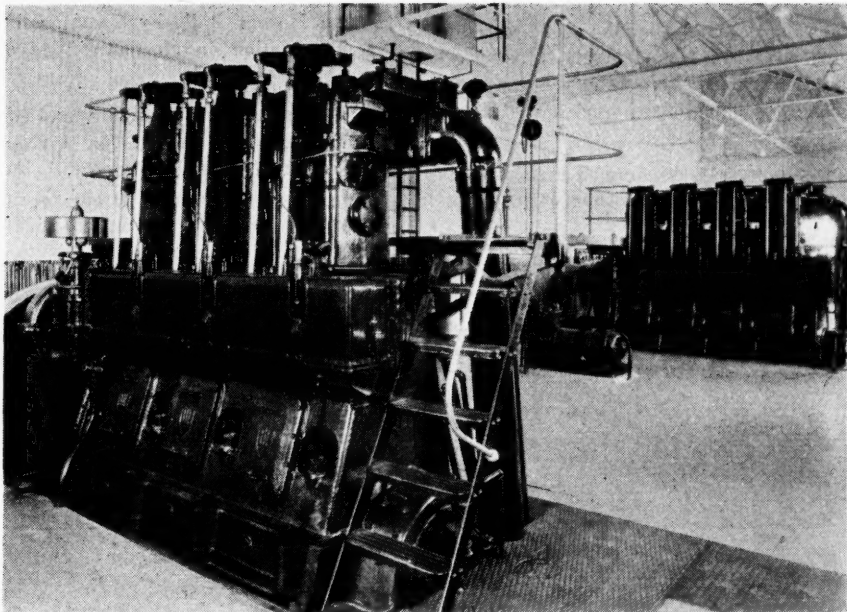
The purpose of this line is to deliver crude produced by the company's wells in Oklahoma City to the refinery at Ponca City. Gathering lines from the Oklahoma City field run the crude into two 10,500-barrel tanks located at the booster station in Oklahoma City. This



Several Miles of Pipeline Were Laid Through Rough Country Such As That Here Shown

is a 40 by 100-foot steel frame building housing De La Vergne 265-horsepower and 200-horsepower full Diesel engines, driving a National transit duplex pipe line pump, and having a capacity of 15,000 barrels daily, and a Prescott duplex with a capacity of 10,500, a total capacity of 25,500 barrels daily.

The station boosts the crude through an 8-inch National seamless pipe line 80 miles to the Ogg Pump Station, located



Two De La Vergne Diesel Engines Furnish the Motive Force in the Oklahoma City Booster Station

14 miles from the tank farm of the Continental refinery in Ponca City.

The entire project was supervised by the engineering department of the Continental Oil Company, and the Truman-Smith Construction Co., Eldorado, Kansas, executed the general contract. Major construction equipment was made by the Northwestern Engineering Co., Green Bay, Wis.

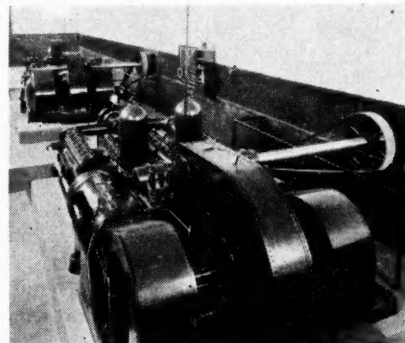
The major portion of the right-of-way is through broken and rough country and through hills of rock, which necessitated blasting. There are two river crossings, the North Canadian and the Cimarron rivers, and four stream crossings.

A greater number of trucks than ordinarily are used were necessary for the stringing of pipe, as the highway commission load limit allowed an average of only seven joints per truck. A special truck equipped with a gin pole was used to unload the pipe at various shipping points, unloading either from the cars to the ground or direct to the truck. Four machines were used to cut the ditches 18 inches wide and 32 inches deep, while four gasoline driven shovels cut the ditch approaches to rivers, creeks and highway crossings and in cases where it was necessary to skin a path

for ditches through underbrush and to clear such obstacles as might slow up operations.

The lineup and tacking crew worked just ahead of the firing line crew and moved forward at about the same rate of speed. The bellhole welders worked separately and at a considerable distance behind the firing lines.

The Continental Oil Company inspectors consisted of two lay inspectors, four



National Transit Duplex Pipeline Pump, in Foreground

And Prescott duplex pump installed in Oklahoma City station. These pumps have a combined daily capacity of 25,500 barrels.

welding inspectors, two ditch inspectors and two material checkers. This crew was divided into two sections, one section inspecting work started at the south end of the line, the other inspecting the north section. Sections of the line through marshes and across rivers and streams were coated with a cold application of paint. Approximately half the length of the line was welded with a No. 1 rod using a standard ripple weld, the remainder of the line using a Linde weld with No. 24 rod. This latter process, it is said, reduced the welding crew by half and made as much speed again as the former method.

Linde weld tests showed a slight gain in tensile strength together with the po-



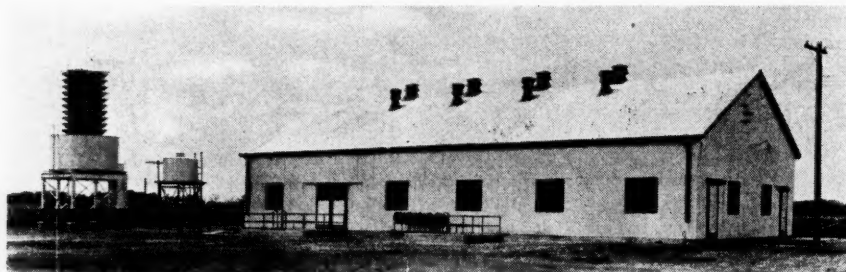
Frame Houses Built by Continental Oil Co. for Employees at Pipeline Booster Station on Northern Edge of Oklahoma City Production Field

tential savings both to company and contractor over the standard No. 1 ripple weld, owners of the line report.

Contract was awarded December 14,

1930, and construction started December 18. With lost time on account of delayed rail service, five days, and one and a half days loss because of heavy rain, the project was completed January 16, 1931, a total of 23½ working days.

Right-of-way for the line was purchased several months in advance of the actual laying, thus there were no delays on that account. It is believed that the laying of the 80 miles of 8-inch welded line in 23½ working days constitutes a pipe-line laying record. It is interesting to note that when this line was tested to 1200 pounds pressure, there was but one pin hole leak in a flange at one of the valves where the layers failed to pull a bolt to its full tightness.



Steel Frame Booster Station, 40 by 100 Feet

Widespread Ramifications of Telephone Industry

A survey made by Frazier Jelke & Co., New York City, indicates that 60 per cent of the homes in the United States are wired for telephones. The Bell System, said to be directly connected with 91 per cent of all telephones in the world and offering subscribers a communication range of more than 32,500,000 stations, suffered a net loss of only 38,500 telephones through disconnection in the first quarter of 1931, according to the study. The survey indicates that major problems of the Bell System have been the discovery and practical application of new scientific knowledge of the principles of telephony. Its engineers have developed mechanisms making possible "multiple channel wires, the translation of dial impulses into mechanical voice calls, complicated switchboards, long-distance repeaters, buzzless conversations, radio telephony and trans-oceanic oral communication." Two-way television has come, but lacks practical commercial application, it is said, because of expensive apparatus involved. Interesting by-products, such as sound pictures, radio improvements, picture transmission by wire, the artificial larynx, devices

for the deaf and physicians' instruments have also come from the Laboratories, which employ 5700 people and have expended as much as \$20,000,000 for research in a single year, the survey declares. The American Telephone Company and associated corporations, operating the Bell System, employ about 395,000 persons.

Sprinkler System for Hotel

Southern Pines, N. C.—The Highland Park Hotel Co., owners of the Highland Pines Inn, plan the installation of a sprinkler system in the hotel this summer. At a recent meeting of the board of directors a committee, headed by S. B. Richardson, president of the company, was named to secure bids on the work. Other members of the committee include Dr. W. C. Mudgett, C. T. Patch, A. I. Creamer and F. W. Van Camp.

\$525,000 Federal Building

Key West, Fla.—The Treasury Department, Washington, Jas. A. Wetmore, Acting Supervising Architect, opens bids June 26 to erect a new \$525,000 Federal building here to house the post office, court house and custom house.

\$10,000,000 Ship Modernization

Norfolk, Va.—In accord with an order signed by the Secretary of the Navy, the battleship Idaho will be sent to the Norfolk Navy Yard for modernization at a cost of about \$10,000,000, the work to begin around October 1 and extend over a period of 18 months. This is the second battleship of that class scheduled to be modernized at this yard, the Mississippi having already arrived and preliminary work started. It is estimated that 1800 men will be required on each ship for 18 or 20 months.

Plan \$650,000 Bond Issue

Nashville, Tenn.—Tentative plans of the city school board, of which Albert E. Hill is chairman, contemplate a bond issue of \$650,000 for junior high and elementary school buildings in various sections of the city. Buildings which would be improved with additions or replaced with new structures include the Ransom, Sylvan Park, Calvert, Clemons, Bailey, Highland Heights, Hadley negro school and others. Marr & Holman, Nashville, have been selected to prepare plans for the East Nashville senior high school.

Factory Sales Distribution

IN the distribution census, the first of its kind ever taken by the United States Census Bureau, the purpose being to ascertain the channels of trade through which flows the output of industries, there are being developed some interesting facts. An analysis of advance reports shows that, in the distribution of industrial products, other manufacturers and large consumers form the highest purchasing group in the percentage of total sales made by many manufacturers. Wholesalers and jobbers in some lines also rank high as direct outlets for industry.

Nearly half the total volume of factory sales of manufacturing plants in the hardware industry is made to industries and to other large consumers of hardware, such as automobile and furniture manufacturers, banks, schools, etc.; 33 per cent goes to wholesalers and 13 per cent to retailers. On the other hand, manufacturers of plumbing supplies sell 70 per cent of their output to wholesalers and jobbers and only 7 per cent direct to industrial users. Manufacturers of bags, (other than paper), dispose of more than 80 per cent of their output to users in manufacturing, to packers, mills, public utilities, produce houses and so on. About 41 per cent of the scale and balance sales by manufacturers are made direct to industrial users. Nail and spike manufacturers sell more than half their output direct to industrial consumers.

Manufacturers of textile machinery and parts sell their products principally to consumers; that is, to textile products manufacturers. Of the total 1929 textile machinery sales, more than 88 per cent was to consumers; 9 per cent went to wholesalers and retailers, and 1.9 per cent to dealers affiliated with textile manufacturers. Of the total sales, 2.6 per cent was made through manufacturers agents, brokers and commission houses. Textile machinery sales in 1929 amounted to \$112,114,000, of which \$99,384,000 represented sales to consumers. Of the 372 establishments in the industry, 274 reported sales to consumers, and there were 17 establishments engaged wholly in contract work,

these not being included in the distribution of sales report.

A tabulation by the MANUFACTURERS RECORD from preliminary sales distribution census releases shows the percentage of distribution of factory sales, reported by establishments engaged primarily in the manufacture of the following commodities:

FACTORY SALES OUTLETS, VARIOUS INDUSTRIES, 1929

Product	Per cent of total sales to:		
	Factory Sales Value	large consumers	Wholesalers
Textile machinery..	\$112,114,000	88.7	9.0
Aluminum products	152,621,000	76.0	7.4
Gas machines, gas and water meters	39,606,000	71.4	8.8
Tanning materials, dye stuffs	37,479,000	64.5	...
Steel springs.....	46,171,000	65.7	31.2
Collapse tubes...	8,371,000	60.1	39.9
Cast-iron pipe and fittings	80,251,000	57.8	37.0
Linseed oil, meal..	118,221,000	45.6	45.7
Scales and balances	25,302,000	41.0	...
Bags (other than paper)	170,176,000	80.4	9.2
Brushes	45,506,000	19.4	49.2
Pulp goods	28,760,000	89.6	3.2
Saws	21,996,000	25.8	52.5
Crucibles	2,820,000	90.0	...
Mirrors	31,890,000	37.7	32.3
Hardware	229,478,000	49.5	33.0
Files and rasps...	14,046,000	15.2	79.0
Plumbers' supplies.	129,823,000	7.4	70.9
Wall paper	29,962,000	...	67.0
Processed waste....	35,314,000	64.1	27.1
Explosives	70,996,000	71.6	28.4
Screw machine products and wood screws ...	103,182,000	79.9	17.8
Excelsior	5,009,000	48.1	27.9
Cleaning and polishing preparations.	50,989,000	18.5	58.3
Sand-lime brick ...	3,146,000	47.6	52.0
Leather belting ...	34,505,000	70.4	21.7
Nails and spikes...	13,017,000	50.8	31.2
Bolts, nuts, valves and rivets	108,006,000	69.4	25.3
Metal doors, shutters and sash....	69,242,000	85.0	...
Envelopes	60,819,000	49.0	48.3
Dairy and poultry equipment	42,541,000	36.8	34.7

Architects for \$1,575,000 Post Office

Knoxville, Tenn.—The Treasury Department, Washington, Jas. A. Wetmore, Acting Supervising Architect, has commissioned Bauman & Bauman, Knoxville, to prepare plans and specifications for a \$1,575,000 post office building to be erected here, on the block bounded by Walnut, Cumberland, Locust and Main avenues.

\$40,000,000 IMPROVEMENT BONDS

Kansas City and Jackson County Plan Big Expansion Program Over 10-Year Period

Kansas City, Mo.—Marking a forward step in a big expansion and improvement program, Kansas City and Jackson County, by a vote of four to one, have approved a 10-year program to involve bond issues totaling upwards of \$40,000,000. The election was held in pursuance of plans worked out by the Civic Improvement Committee, appointed for that purpose, and of which Conrad H. Mann is the chairman of the executive committee. A program of improvements for the 10-year period as it affects Kansas City, Jackson County and the School District of Kansas City, and as outlined by the committee, includes the following items and estimated costs:

Kansas City—new \$4,000,000 city hall and site, including jail, courtroom, etc.; playgrounds, parks and boulevards, \$2,750,000; public hospitals, \$2,000,000; public markets, \$500,000; stadium and outdoor theater, \$750,000; new fire stations and equipment, \$375,000; extension of police department, \$125,000; trafficways and boulevards, \$8,300,000; Blue River flood protection, \$1,000,000; waterworks extension and softening plant, \$3,500,000; municipal auditorium, \$4,500,000; sewers and pumping stations, \$1,500,000; municipal airport improvements, \$500,000; street signs, underpasses, etc., \$200,000; Brush Creek improvements, \$1,000,000, and garbage and refuse incinerator plant, \$1,000,000.

Proposed Jackson County improvements include: New courthouse and jail building at Kansas City, \$4,000,000; remodeling courthouse at Independence, \$200,000; new detention home and site, \$250,000; construction of county roads, \$3,500,000, to include 82 miles additional of concrete roads and the completion of the system. Already \$6,500,000 of \$10,000,000 deemed necessary for a county road system has been voted in four years, during which period 224 miles of roads have been completed.

Of the total bond issue, Kansas City will have \$6,400,000 available for expenditure within the next two years, and it is the purpose of the Civic Improvement Committee to advance those projects which will furnish the maximum amount of employment. Present plans are to begin work on the Municipal Auditorium at once, with a view to completing it before the middle of 1932.

IRON, STEEL AND METAL MARKET

Steel Production Declines About Two Points for the Week

Pittsburgh, June 8—[Special.]—Steel ingot production last week was at about 40 per cent of capacity, this being the second week for a production decrease of about two points, after several weeks of one point drops. Production has only to decrease four points more to bring it down to the rate of last December, and in all probability July will really run somewhat below December.

Until recently it was considered highly improbable that the low December rate would be seen again, the theory being that liquidation of stocks of steel and manufactured wares shoved steel production to a point well below actual ultimate consumption. Steel has been having seasonal swings in the usual direction and at the usual time, and more marked than in ordinary or typical years. By the same token there should be an unusual increase after July, measuring the increase, of course, by percentage.

Some lines of steel consumption may easily do better in the autumn than at any other time this year, but there is no ground for predicting that the sum total of demand will result in production at any time for the remainder of the year equaling the 54.2 per cent rate officially reported for last March, because so many lines will be off seasonally. There is the case of rails, bought annually, but for delivery almost entirely in the first half of a year. Then there is tin plate, involving heaviest demand in the spring, against fruit and vegetable packs, and finally there is the automobile industry, which on an average reaches peak production in April and then tapers off month by month to December. What may be called miscellaneous demand has two peaks, spring and autumn.

The steel trade has no thought that general business will improve enough this year to give it any great assistance in getting up to a greater stage of activity. It is felt in some quarters, probably the majority, that the worst in general underlying conditions has now been passed, but nowhere is it thought that when recovery begins it will do a great deal for a while.

The preliminary report of automobile production in May, at 338,307 cars and trucks, United States and Canada, disappoints predictions made very generally a month and more ago, that May would be the peak month, and even runs counter to estimates made towards the close

of May. There is 3 per cent decrease from April. In the last eight years March was the high month once, April four times and May three times, but there was a notion that on account of peculiar conditions this year the peak would come later than usual. In two of the years the months named were not final peaks, production declining but then going up to a fresh peak, once in August and once in October. In the first five months, this year was 29 per cent under last year and 51 per cent under the year before.

Steel producers have no consistent policy as a class or they would not have allowed prices to decline so much or so irregularly, some finished products being well below cost of production while others do decidedly better, but in spots there is seen some signs of a new policy now. Some sellers are definitely avoiding orders that would result in losses, letting competitors take them and allowing their own operating rate to go down below the general average. There is not much seeking for definite price advances. In a few lines advanced prices are asked "for third quarter" but this may be misleading for it does not assure that current market prices will advance July 1. Rather it is a matter of asking a little premium if a customer wants price protection up to October 1, and it might possibly be regarded as a gesture intended to wave aside a tendency to decline. Merchant bars are distinguished by being stiffer, 1.65c being obtained on small current lots and on some specifications against contracts.

Metals Continue to Show Tendency to Decline

New York, June 8—[Special.]—In the business depression of 1920 and 1921 farm products, textiles and non-ferrous metals were the first to take a turn upward in price. The average price of other commodities did not reach bottom until six months after these three groups had started their upturn. All of which is one reason why the business world has an eye on the metals.

Unfortunately, declines are still the order of the day. Copper has fallen a half-cent per pound during the past week, selling as low as 8 cents per pound, an all-time low. Zinc broke through its former low level by \$1 per ton, selling at the lowest price since 1895. Tin has sold down to the lowest point since 1899. Only lead among the

major metals has failed to dip to the lowest point of this century.

Declines on the New York Stock Exchange have still had an important bearing on metal prices. It is probable that without the declines on the stock exchange metals would not have gone to present low levels. Purchasing was of fair proportions in a few instances but as a general rule low prices did not stimulate business. Consumers are apparently weary of "bargain prices" and wish stability more than anything else. The chief purchasing of the week has been for actual needs in sight, except in the case of copper where fourth-quarter requirements were contracted for.

Metal statistics for May are expected to be unfavorable, with surplus stocks increasing in every instance. Tin figures are already out and show a world's visible supply of over 51,000 tons, the largest in history, there having been an increase of over 2700 tons in May. Stocks of tin in warehouses of the United Kingdom are the largest in history.

Copper statistics will be issued at the middle of this week and it is expected that the favorable trends the first three or four months of this year will have been nullified. The same will hold true of zinc and even to lead which is apparently in the soundest position among the metals.

One of the optimistic developments was the advance of \$1 per ton in the price of zinc ore in the tri-State district, selling at \$21 per ton despite the fact that surplus stocks are around 66,000 tons, the largest in history. The stocks, however, are in the hands mostly of five or six powerful companies who will hold rather than sell at present unprofitable levels. Strange to say, the price of slab zinc fell \$1 per ton soon after the rise in the ore price, a paradoxical procedure.

The two representatives of the Katanga company, largest copper producer of Africa, have sailed for home after a month's conference at New York, without accomplishing anything in the way of curtailing production further. At their previous visit in November it had been agreed to cut world production 20,000 tons or more monthly. This lack of a further agreement depressed copper sentiment.

The governor of Arizona has sent a telegram to President Hoover urging that a duty be placed on copper. He has also communicated with governors of other copper producing states. It looks like a movement which might bear

fruit. In the nineteenth century there had been a duty of 4 cents per pound on copper, which is the same amount that is being asked for now.

The domestic price of copper was firmer Thursday, with 8¼ cents the minimum price as against 8c on the preceding day.

When the export price of copper was reduced to 8.775c per pound on Tuesday, sales for the day were 2350 tons. Though this was a fair total it was less than the 3500 to 5000 tons sold on days of other recent reductions. On Wednesday, sales abroad fell off to 265 tons when foreign users learned that American consumers were again purchasing the red metal under the price fixed for export. A reduction to 8.525c on Thursday stimulated sales of over 2700 tons.

Undoubtedly the present selling price of copper is below cost of production for the great majority of producers. In fact, but one company which operates mines in this country has costs as low as 7½c per pound before depreciation. In 1930, costs ran up to 11 cents per pound. The copper industry as a whole is working under 50 per cent of capacity, the governor of Arizona stating that 48 per cent is average. Naturally, the lower the operating rate, the higher the cost per pound of copper production.

The United States is but little concerned with the low price of tin since no tin is produced in this country. However those consumers who have fairly large inventories accumulated at higher prices hate to see tin prices fall now. The world's producers agreed to cut production another 20,000 tons yearly at the meeting at The Hague May 16, effective June 1.

Commodity prices in general have fallen 30 per cent in 22 months. During this time nickel has been unchanged in price and aluminum has declined but 5 per cent, these being monopolistic metals.

Pig Iron Production Curtailment Program Under Way

Birmingham, Ala., June 8—[Special.]—With one furnace out of commission, temporarily it is announced, fires banked, the program of curtailment in pig iron is under way in the South. Shipments have been lagging recently, melters buying against the very early needs and making no speculation as to the future. Cast iron pipe producers are doing fairly well, with 50 per cent capacity operations and a little better being reported. No sales of pig iron are announced as yet for delivery during the third quarter of the year. Three months of curtailed production will bring about

a reduction in the iron tonnage on yards and will have good effect.

The base price of pig iron remains firm, \$12.00 to \$13.00 being quoted on No. 2 foundry for shipment in home territory and \$11 for outside territory.

Foundries are reporting trade lagging and not hopeful of early recuperation. Machine shops are doing fairly well but are not employing iron as the principal raw material product.

In the steel trade there is a downward trend. Numerous orders are reported but the aggregate tonnage is not as satisfactory as might be hoped for. Tennessee Coal, Iron & Railroad Company will furnish 2,000 tons of reinforcing concrete bars for a hydro-electric plant in Texas; 50 per cent of the 1200 tons of structural steel to be fabricated for a moving picture theater in Nashville will be shaped in Birmingham. Other orders are reported but the aggregate is not indicating much better conditions.

Structural fabricating shops of the Birmingham district are making around 60 per cent capacity. Numerous small contracts are still coming in. Plate fabricators also are producing fairly well. The Connors Steel Company reports trade warranting 50 to 60 per cent operation.

Eleven open hearth furnaces have been on ingot production recently, the estimate as to steel mill operations being reduced from 65 to 50 per cent capacity. However, the ingot output is not as much reduced as formerly, inasmuch as the past year and a half saw much betterment brought about in the steel mills, enlargement of the open hearths being part of the program.

The rail mill of the Tennessee, Coal Iron & Railroad Company, Ensley Works, continues to function, with deliveries being made on the Seaboard Air Line order and now and then providing tonnage to the other roads who placed business here during January. Unfilled tonnage at this plant is dwindling steadily with but a few thousand tons of additional orders received so far from the railroads.

Thomas D. Temple, for 15 years superintendent of the Fairfield works of the American Steel & Wire Company, has been transferred to Joliet, Ill., to take charge of two plants of the same company. J. W. Bersheid, of Joliet, has come to the Birmingham district to succeed Mr. Temple.

Coke is holding its own with more than 60 per cent capacity operation. Foundry coke is quoted at \$5, with varying prices on domestic coke.

Portland cement mills are working at around 80 per cent capacity and taking business at low prices. Shipments are steady with more business anticipated

as highway and industrial construction in a few directions is being taken up.

PIG IRON

No. 2 foundry, 1.75 to 2.25 per cent silicon, \$12.00 to \$13.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$12.50 to \$13.50; iron of 2.75 to 3.25 per cent silicon, \$13.00 to \$14.00; iron of 3.25 to 3.75 per cent silicon, \$14.50 to \$15.00.

OLD MATERIAL

Steel rails	\$10.00 to \$11.00
Steel axles	12.00 to 12.50
Iron axles	12.00 to 12.50
Heavy melting steel.....	8.00 to 9.00
No. 1 cast.....	9.00 to 10.00
Stove plate	7.00 to 8.00
No. 1 railroad wrought.....	8.00 to 8.50
Car wheels	8.00 to 9.00
Tramcar wheels	8.00 to 9.00
Machine shop turnings.....	5.00 to 6.00
Cast-iron borings	5.00 to 6.00
Rails for re-rolling.....	10.25 to 11.00

\$1,000,000 Railway Contract

Gilbert, W. Va.—The Virginian & Western Railway Co., a unit of the Virginian Railway Co., A. M. Traugott, chief engineer, Norfolk, Va., has awarded contract to the Nelson and Chase & Gilbert Co., New York, to construct section F of the Guyandot River Line, between Elmore and Gilbert, 6.38 miles. This section is one of the last in a 43-mile line, of which 33 miles have been built. The contract is said to involve \$1,000,000 and covers the construction of three tunnels and two bridges.

Roanoke Water Company Sold

Roanoke, Va. — After negotiations pending since last fall, the Roanoke Water Works Company and its subsidiaries have been sold to the Consumers Water Company, Portland, Me. Charles E. Moore and D. R. Taylor, manager and assistant manager, respectively, of the Roanoke company will continue in their positions. According to Vernon F. West, president of the purchasing company, plans will be made to enlarge and develop local sources of water supply as the demands of the city require. In addition to the Roanoke Water Works Company, the purchasers acquired all outstanding stock of the Vinton-Roanoke Water Company, the Richmond Development Corporation and the Virginia Water Company. Principal properties acquired are owned by the local company, although a tract of 29½ acres adjoining the Corbieshaw addition and intended as the future site of a reservoir from which water would reach the city distribution system by gravity is owned by the Richmond Development Corporation, which is part owner with the Virginia Water Company of the Carvin's Cove dam and reservoir in Botetourt County. The Vinton-Roanoke Company holds a contract to supply the town of Vinton with water, and owns certain franchises.

AVIATION, AIRPORTS AND AIRWAYS

\$1,000,000 Wind Tunnel Completed

Langley Field, Hampton, Va.—An immense wind tunnel and a half-mile sea-plane towing channel for experimental purposes, each of which is said to be the largest in the world, have been officially dedicated here by the National Advisory Committee for Aeronautics, Dr. Joseph S. Ames, president of Johns Hopkins University, chairman. Representing a cost of more than \$1,000,000, the facilities were put in operation upon the occasion of the sixth annual aircraft engineering research conference, Dr. Ames placing the tunnel in operation and Rear-Admiral David W. Taylor, retired, of the United States Navy, and vice-chairman of the committee, dedicating the channel. The tunnel was built for testing full-size airplanes, having two oval throats 60 by 30 feet, through which two four bladed propellers draw an air stream at velocities up to 115 miles an hour. Two 4000-horsepower motors are used to drive the propeller and the apparatus is housed in a building, 434 by 222 feet. An airplane mounting between the throats of the tunnel turns the plane being tested in any attitude of flight, while electrical recording devices chart simultaneously on printed cards loads and other data. The channel is a concrete basin, 2040 feet by 24 feet, filled with water to a depth of 12 feet, on which floating and flying boat hulls will be towed, and where readings will be made to show their efficiency. The channel is straddled by a towing car capable of pulling models at a speed up to 60 miles an hour. A steel tape overhead is punched at 5-foot intervals by a device that automatically registers speeds and loads at each point.

Improving Fort Worth's Airport

Fort Worth, Tex.—Improvements are being made at Meacham Field here, the municipal airport. Contract was let recently for leveling the field and for four runways, ranging from 3500 to 4000 feet in length. When a knoll is removed and a gully filled the steepest grade on the 500-acre field will be less than two per cent. Grading and runways are scheduled for completion soon. All of the work is being done under specifications by A. P. Taliaferro, Jr., of the Airport Division of the Department of Commerce, Washington. Construction is also under way on a repair shop and plant for the Texas

Aero Corporation. The building is being erected by the city and has been leased to the firm for a period of years.

Plans for further improvements include the construction of a six-foot safety wire fence, rerouting a state highway to make possible the addition of a 60-acre tract owned by the city, and construction of a large administration building for which plans have been prepared. Twelve air lines operate in and out of the field and four hangars provide storage for 150 planes. A total of over \$700,000 will have been expended, on completion of work now under way.

Aerial Surveys for Pipelines

Longview, Texas—Air photography is being extensively used in surveying for the rights-of-way of pipe lines from East Texas oil fields to Gulf points, or to connect with existing main pipe line systems, or to serve new and enlarged refineries near by. The Edgar Tobin Aerial Surveys, San Antonio, recently completed surveys for three lines—one for the Arkansas Fuel Oil Co., one for the Sun Pipe Line Co., and the third for the Gulf Coast Pipe Line Co.

Cast Iron Soil Pipe Used for Airport Drainage

A successful experiment has been completed in the installation of standard cast iron sewer pipe as a drainage measure to relieve the muddy condition of the southern end of the airport at Anniston, Ala., where excessive rains had caused an overflow of Coccolecco Creek. A Department of Commerce engineer, a city engineer of Anniston, and officials of the United Chambers of Commerce of Anniston co-operated in the work. The pipe was manufactured in 12 Anniston plants. In the tests, 4-inch standard cast iron soil pipe was used, with one end belled into the other, and slag backfilled into the ditches. The laterals were run into manholes centrally located from which main drains of terra cotta pipe were used to run the water into a nearby creek. The four manholes were placed about 400 feet apart, with standard clean-out basins for collection of silt and foreign matter.

The Anniston Airport is owned by the United Chambers of Commerce and leased to the Department of Commerce as an emergency landing field.

Greenbrier Airport at White Sulphur



The New Greenbrier Hotel at White Sulphur Springs, W. Va., claims the distinction of being the first hostelry in the country to operate its own airport. In a valley of the Alleghany Mountains, one mile west of the hotel, between the Chesapeake & Ohio Railway and U. S. Route No. 60, work is under way on the airport which is to be owned and operated by the hotel management for its guests. Recently an extensive addition to the Greenbrier was completed. Hangars and complete service facilities are to be installed and completed shortly. The field was surveyed, drained and graded by the engineering department of the hotel. It contains 175 acres, acquired for this particular purpose in 1929. L. R. Johnston, general manager of the hotel, said the field had been established in anticipation of the growing use of the airplane as a favorite mode of travel for the type of guests attracted to the resort.

HIGHWAYS AND MOTOR TRANSPORT

Power Tools Speed Construction of Forest Roads

The United States Forest Service, Washington, some time ago purchased four carloads of earth-moving equipment for the construction of roads in national forests in Georgia, Louisiana, Virginia, West Virginia, Arkansas, North Carolina, Florida and Tennessee. The equipment was manufactured by the American Tractor Equipment Co. of Oakland, Calif., and Peoria, Ill., and consisted of 26 hydraulic earth moving units. All are heavy duty machines capable of moving large yardages and are to be used with a fleet of crawler-type tractors. Each is hydraulically controlled, operated by a pump which derives its power from the power take-off shaft of the tractor. The operator controls the cutting, loading and spreading of earth with a single lever.

Three types of machines were included in the recent shipment: A hydraulic scraper of large capacity, with hydraulic



United States Forest Service Road-Building Operations

This unit consisting of an Ateco Dirtmover and a Caterpillar "60" is shown at work on a low cost highway—11 miles out of Clayton, Ga.

control for loads up to four yards; a scarifier, built for use with tractors of 60 or greater horsepower and capable of

tearing up heavy soil or sandstone to a depth of 24 inches; and a hydraulic bulldozer for stripping overburden, spreading fills and, in some cases, for feeding power shovels when deep cuts are made.

A large order was placed also with the Cleveland Tractor Co. of Cleveland,

Ohio, for Cletrac crawler-type tractors for use in various parts of the country for building trails through government reservations.

In the fiscal year 1932 the Forestry Service will expend approximately \$9,500,000 in 33 states, equaling the expenditure for the current year. For the first time, Louisiana and Wisconsin are to share in expenditures for forest roads, construction and maintenance of which is handled by the Bureau of Public Roads.

Bids on Six Bridges

Baton Rouge, La.—Bids will be opened June 30 by the Louisiana Highway Commission for the construction of six bridge projects, including the following:

Red River bridge, Alexandria—one 500-foot simple span through truss, two 160-foot deck trusses, four 100-foot deck trusses, all on concrete piers, and 1892 lineal feet of reinforced concrete trestle

Ouachita River bridge, Monroe—double leaf truss bascule span, 160-foot center to center trunnions, six 100-foot deck truss spans, all on concrete piers, with deck girder approach spans

Red River bridge, Shreveport—one 520-foot cantilever span with two 182-foot anchor arms, six 100-foot deck truss spans, all on concrete piers, and 1384 lineal feet of reinforced concrete trestle

East approach to Shreveport bridge—1.38 miles of concrete paving

Missouri Pacific overpass near Tullos—five 40-foot reinforced concrete deck girder spans on concrete bents and piles

Cane River bridge, Natchitoches—eleven 40-foot reinforced concrete deck girder spans on concrete piles.



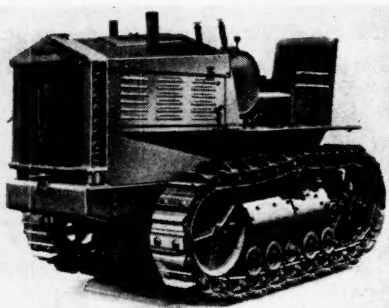
A Crawler-Type Tractor Pushing a Backfiller

The Cleveland Tractor Co. recently shipped a number of tractors fitted with Woolridge backfillers to the United States Forestry Service for use in the South and elsewhere.

NEW AND IMPROVED EQUIPMENT

Small Cletrac Crawler Tractor

The Cleveland Tractor Company, Cleveland, Ohio, announces model "15" Cletrac, built to meet requirements for a crawler tractor of general utility. Because of its smaller size and lower price, the machine is expected to be sold more largely to farmers than to any other class of buyers, although it is said to be adaptable to lighter classes of industrial operation. It is equipped with a 4-cylinder motor of the 4-cycle, water-cooled L-head type; force feed lubrication, tubular radiator cooling system, Borg and Beck clutch of the push type design; steering is accomplished by the effect of the motor through planetary compensating gears. The lower track wheel assemblies are of plain bearing design, having cast iron bearing boxes with hardened steel shafts. The machine has a length overall of 93½ inches,

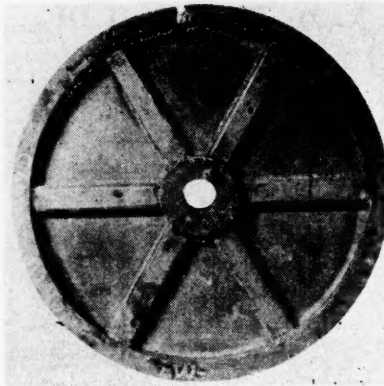


Especially Adapted to Work on the Farm

width overall of 50½ inches, height at radiator cap of 52½ inches, ground clearance of 13½ inches, and center to center of track, 40 inches. At the draw bar it is rated at 15 horsepower and at the power pulley, 22 horsepower.

All-Welded Steel Gear Blank

All-welded rolled steel gear blanks for use in the manufacture of cut gears have been developed and are now being manufactured by Lukenweld, Inc., Coatesville, Pa., a division of Lukens Steel Company. The welded steel blank may be employed for spur, herringbone and helical gears and may be made any size from 24 inches outside diameter up. While all-welded gear blanks are ordinarily made from S. A. E. 1020 carbon steel, rims may be furnished in steels of special analyses if desired. Hubs are gas-cut from solid rolled steel and webs are gas-cut from rolled steel plate, as are the ribs, the latter formed into chan-



Made Without Patterns

nels of the required section. Webs are arc-welded to the hubs and the reinforcing channels are welded to the web structures. Final operation consists of circular bending of the gear ring and arc-welding into position to form the finished gear blank. Before shipment, the gear blanks are carefully annealed under pyrometric furnace control. No patterns are required in the manufacture of all-welded gear blanks, as gas-cutting and arc-welding are done with blueprints,

the time-saving thus accomplished being accounted an important advantage in filling requirements occasioned by gear breakdowns.

Aluminum Straight Edge

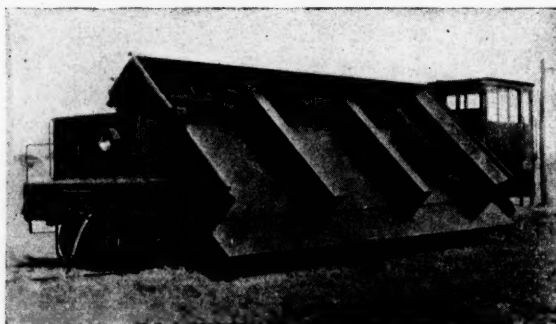
An aluminum straight edge has been put on the market by the Cleveland Formgrader Company, Cleveland, Ohio, as a development in the design and construction of road-building equipment. The blade is 10 feet long, made of special aluminum alloy, with a flat bottom that insures greater accuracy, it is said, because its increased bearing area minimizes the tendency to sink into the fresh concrete surface. A symmetrical box section and double thick web, with hemmed top, combine to produce what is described as a better tool for checking concrete pavement surfaces. The handle is seamless tubing, also made of aluminum alloy and is fastened directly into the blade, being supported on either side by an aluminum brace. The straight edge, weighing only four pounds, is described and illustrated in a folder being distributed by the company.

Gas-Electric Locomotive

Dump Car

The Differential Steel Car Company, Findlay, Ohio, transportation division of the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has introduced a new gas-electric locomotive dump car. It consists essentially of a locomotive chassis with a dump body mounted on it, a self-contained unit carrying its own power plant. The locomotive is designed for service in open pit mining and quarry work and in industrial plants. It has a 24-yard level load dump body which permits a payload

to be hauled on the locomotive as well as on the trailer cars. The equipment weighs 45 tons light and 80 tons loaded. Air brake equipment is Westinghouse combination straight and automatic with Gardner Denver 60-foot compressor belted from each engine. The power plant is mounted between the center sills and is protected from falling material. It consists of two Buda type JH-6 gasoline engines rated at 155 horsepower at 1200 rpm; two Westinghouse generators 180-D-5; four type 908-RH motors and necessary control apparatus. This double power plant equipment will produce a maximum tractive effort of 36,000 pounds, it is said, and will have a free running speed of 19 miles per hour light.



Self-Contained
Westinghouse
Unit
Carrying
Its
Own Power
Plant

CONSTRUCTION DEPARTMENT

and

NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ga., Atlanta—Chief of Division of Purchases and Sales, Department of Commerce, Washington, D. C., receives bids June 12 for lighting facilities on New Orleans-Atlanta airway. See Want Section—Bids Asked.

Ga., Savannah—City let contract to Industrial Electric Co., 114 W. Bay St., at \$19,600 for furnishing and installing lighting equipment at Savannah airport.

Ky., Maysville—Rotary Club committee studying location of emergency air field; E. T. Kirk, member.

Ky., Richmond—City, H. de B. Forbes, City Engr., does not at this time contemplate municipal airport. 5-28

Md., Frederick—City, Elmer St. C. Maxwell, City Engr., let contract for conc. block administration, building, mess hall and showers at city airport at \$9535 to J. William Cannon; for rein. conc. tent floors at \$1144 to LeRoy Hoke. 4-23

Miss., Bay St. Louis—Dept. of Commerce, Washington, leased Perkins Farm for intermediate landing field; install beacons, fog horns, night illumination.

Mo., Kansas City—Austin Co., 16112 Euclid St., Cleveland, Ohio, has contract for hangar, municipal airport, for National Air Transport, Inc., Riverside Dr.; 185 tons steel.

N. C., Asheville—City Council received proposal from R. H. Brann, Boston, to lease municipal golf course and Recreation Park.

Okla., Oklahoma City—City, George F. Brown, Engr., Petroleum Bldg., soon ask bids on \$30,000 hangar and office building, at municipal airport; 1 story, 120x140, steel and brick; Langbein & Johnson, Archts.

Okla., Tulsa—City, H. A. Parker, Engr., received low bid of \$61,481 from G. J. Bowie, Daniels Bldg., for airport administration building; Leon Senter, Archt., Philtower Bldg.

Tenn., Cowan—Tennessee Department of Highways and Public Works, Nashville, grade, drain and mark landing field for emergency use being established by Winchester, Cowan, Dechard and State of Tennessee, cooperating. 5-28

Tex., Amarillo—City, Mayor Ernest O. Thompson, propose erecting \$300,000 shops and general office building at English Airport or Municipal Field, contingent upon establishment of operating depot by Transcontinental and Western Air, Inc.

Tex., Palestine—City, S. R. Buchanan, City Engr., ask bids on airport work after sale of bonds voted for the purpose, bids opened June 22. 6-4

Bridges, Culverts and Viaducts

Proposed Construction

Arkansas—Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, inquiring for 900 tons struc. steel for 2 bridges.

Louisiana—See Roads, Streets and Paving.

La., Bastrop—Morehouse Parish Police Jury let contract to Clement Sand & Gravel Co., Natchitoches Rd., West Monroe, at \$16,412, for graveling roads.

La., Mansfield—DeSoto Parish Police Jury opens bids July 1 for bridge over Castor Bayou, Funston-Grand Cane road, Ward 6.

Maryland—See Roads, Streets and Paving

OKLAHOMA—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, plans 3 bridges in following counties:

Coal—114-ft. rein. conc. bridge, Colgate, \$25,000;

Blaine—120-ft. rein. conc. bridge, Canton, \$30,000;

Johnson—8-span, 120-ft. rein. conc. bridge, Connerville, \$30,000.

Okla., Oklahoma City—City has preliminary plans for pedestrian underpass at Lee School; G. F. Brown, Engr., City Hall.

Okla., Tulsa—City, Earl Logan, City Aud., has preliminary plans in progress for \$80,000 overpass over tracks, Quanah Ave., West Tulsa; rein. conc.; Wood & Witten, 204½ E. Third St., and Victor H. Cochrane, Conslt. Engr., Wright Bldg.

Okla., Tulsa—City, Earl Logan, Aud., rejected bids for 21st bridge; City Comsn. ordered project readvertised.

City, Tulsa—City, Earl Logan, Aud., has preliminary plans in progress for widening 11th St. bridge to West Tulsa, rein. conc., \$250,000; Wood & Witten, 204½ E. Third St., and Victor H. Cochrane, Conslt. Engr., Wright Bldg.

TEXAS—State Highway Comsn., G. G. Wickline, Ch. Bridge Engr., Austin, opens bids June 22 for 13 bridge projects, costing over \$1,000,000, in following counties:

Caldwell—conc. trestle relief openings over San Marcos River, Highway 3-A, \$130,000;

Fisher—conc. trestle over Clear Fork of Brazos River and Alkali Creek, Highway 7, \$30,000;

Kimble—rein. conc. bridge over North Llano River, Highway 27, \$60,000;

Mason—conc. and steel bridge over Beaver Creek and Highway 9, \$67,000;

McLennan—steel and conc. overpass over St. Louis-Southwestern Ry., Highway 7, \$42,000; steel, conc. overpass over I. G. N., Highway 31, \$47,000;

Presidio—rein. conc. structures, Highway 118, \$40,000;

Robertson—12 steel, conc., treated timber bridges, Highway 43, \$60,000;

Smith-Van Zandt—conc. trestle over Neches River, Highway 64, \$42,000;

Tarrant—rein. conc., steel bridge over Trinity River, Highway 10, \$220,000;

Victoria—steel, conc., treated timber bridge over Coletto Creek, Highway 128, \$60,000;

Kerr—large rein. conc. structures, Highway 27, \$57,000.

Texas—State Highway Comsn. plans 2 bridge projects. See Roads, Streets and Paving.

Texas—State Highway Comsn., G. G. Wickline, Ch. Bridge Engr., Austin, and Mexican Government, plan \$60,000 free bridge over Rio Grande River near McAllen, Tex., and Reynosa, Mex.

Texas—State Highway Comsn., G. G. Wickline, Bridge Engr., Austin, opens bids June 23 for 4 bridges: 21 steel I-beam spans, 28 ft. 6 in., conc. floor, treated timber pile bents, 2 steel truss spans, 150 ft., steel truss span, 280 ft., 4 conc. caisson timber pile bents, 22-ft. roadway, for Brazos River bridge, 21 steel I-beam spans, 28 ft. 6 in., conc. floors, treated timber pile bents, 22-ft. roadway for Relief Bridge No. 1; 34 steel I-beam spans, 28 ft. 6 in., 4 steel I-beam spans, 60 ft., treated timber pile bents, 5 conc. bents with foundation piling, 22-ft. roadway for Little Brazos River

bridge; 14 steel I-beam spans, 28 ft. 6 in., treated timber pile bents, conc. floor, 22-ft. roadway for Relief Bridge No. 2; State Highway 21, all Brazos and Burleson Counties, FAP 620-B.

Tex., Houston—City, J. G. McKenzie, Bridge Engr., completed plans for 75th St. extension underpass, at Galveston Houston & Henderson R. R., \$25,000.

Tex., Houston—City, J. M. Nagle, City Engr., will draw plans for foot bridge over Buffalo Bayou, Stanley St.

Tex., San Benito—Rio Grande del Norte Investment Co., L. L. Zenor, authorized by War Dept., Washington, to build bridge over Rio Grande River.

Tex., Schertz—Bexar County, San Antonio, and Guadalupe County, Seguin, have preliminary plans for 170-ft., rein. conc., steel high water bridge over Ciblo Creek, near Schertz, \$35,000.

Va., Farmville—State Dept. of Highways, Richmond, has low bid of \$10,693 from Perkins-Barnes Co., Blackstone, for 287-ft. bridge over Appamattox River.

Contracts Awarded

Ark., Fulton—American Bridge Co., 71 Broadway, New York, has contract for 300 tons steel for bridge for Missouri Pacific R. R. Co., E. A. Hadley, Ch. Engr., St. Louis, Mo.

Oklahoma—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, let contract to Woods Bros. Construction Co., Lincoln, Neb., at \$121,890, for bridge over Cimarron River, U. S. 77, near Guthrie.

Okla., Tulsa—City Comms. have low bid from L. F. Smith Construction Co. at \$298,000, bridge over Arkansas River, 21st St. 5-7

Tex., New Braunfels—City, Helmer Fischer, Mayor, reported, will let contract to A. C. Moeller, New Braunfels, at \$20,425 for 3-span, rigid frame, rein. conc. bridge over Comal River; J. W. Beretta Engineers, Inc., Engr., 1203 Natl. Bank of Commerce Bldg., San Antonio; Jeremiah Schmidt, Archt., New Braunfels. 5-14

Canning and Packing Plants

Ark., Fayetteville—Central Cannery, Inc., capital \$10,000, organized; J. K. Gregory, Pres.; established bonded warehouses at Green Forest, Fayetteville, Siloam Springs and Bentonville.

Fla., Sanford—W. H. Tunncliffe and associates establish grapefruit and orange canning factory in Phillips Building, Elm Ave. and 13th St.; \$80,000 for machinery and alterations; employ 250 persons.

Fla., Sanford—Eckerson Fruit Cannery, Inc., chartered; T. H. Eckerson, W. H. Tunncliffe.

Miss., Terry—J. W. Grantham converting warehouse for packing shed.

Clayworking Plants

N. C., Penland—Carolina China Clay Co., W. F. Deneen, Pres., soon start building \$75,000 plant to produce kaolin or china clay; \$25,000 building, 40x100 ft., galvanized steel, conc. floors, metal roof; \$50,000 equipment include steam dryers, pumps, galvanized pipe, hammer mills, motors, filter presses. 6-4

W. Va., Chester—Harker Pottery Co., East Liverpool, Ohio, let contract for two-kiln ceramic plant; \$150,000.

Coal Mines and Coke Ovens

Ky., Providence—Harmon Creek Coal Co., capital \$20,000, chartered; J. L. Herron, J. C. Trader.

Cottonseed-Oil Mills

Ala., Selma—Swift & Co., 224 Peters St., S. W., A. L. Murphy, Dist Mgr., Atlanta, Ga., negotiating to acquire plant of People's Cotton Oil Co.

Drainage, Dredging and Irrigation

Arkansas—Bd. of Commrs. of Drainage Dist. 7, Marked Tree, reported, has preliminary plans for widening floodway 2 mi. between St. Francis River, \$750,000; Morgan Engineering Co., Goodwin Institute Bldg., Memphis, Tenn., Engr.

D. C., Washington—Ch. of Engrs., U. S. Army, reported, has low bid from Marietta Mfg. Co., Point Pleasant, for building 2 self-propelled pipeline dredges, at approx. \$1,000,000; for use on Missouri River.

Fla., Miami—T. E. Donovan, 2145 S. Bayshore Dr., applied to U. S. Engr. Office, Jacksonville, for permission to dredge basin 200x285 ft., Biscayne Bay.

La., New Orleans—U. S. Engr. Office, First New Orleans Dist., 4400 Dauphine St., has low bid from McWilliams Dredging Co., 1117 Canal Bk. Bldg., at 6.6 cents per cu. yd., for dredging 4,988,800 cu. yd., place measurement Louisiana and Texas Intracoastal Waterway, Atchafalaya-Cermillon Section, Atchafalaya River to Bayou Gecorie.

Texas—U. S. Engr. Office, Galveston, opens bids June 24 for dredging Cedar Bayou Channel.

Tex., Brownsville—Brownsville Navigation Dist., Z. A. Rosenthal, plans 1000 ft. square turning basin and 17 mi. navigation canal, 25 and 200 ft. wide, to connect with outer channel near here; R. J. Cummings, Engr., Bankers Mortgage Bldg., Houston.

Tex., Brownsville—Cameron County Water Improvement Dist. 14, S. K. Hallam, Sec., Merchants Natl. Bank Bldg., soon take new bids for irrigation system for 15,000-acre tract, including conc. lined canals, underground system, Port Isabel, costing approx. \$1,500,000; W. F. Anderson, Engr., Hollingsworth Bldg.; Homer B. Livingston, Dist. Engr., both San Benito.

Va., Richmond—U. S. Engr. Office, Norfolk, opens bids June 30 for removing about 59,585 cu. yd. material in maintenance dredging, James River, Richmond.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ala., Atmore—R. L. Brown erect warehouse for Alabama Power Co., Birmingham.

D. C., Washington—Potomac Electric Power Co., 10th and E Sts., N. W., erect substation Fifth St., between T and U Sts.; S. J. Prescott Co., Contr., 814 13th St.

Fla., St. Augustine—City Comsn., approved ordinance designating July 7 as election date on granting of franchise to Florida Power & Light Co., Ingraham Bldg., Miami, Joe H. Gill, Pres.

Ga., Sparta—Northwestern Public Utilities Co. erecting power line to Roaring Gap, where connection will be made with Southern Power Co., serve city under lease.

Ky., Ashland—City Council considering granting electric franchise to Kentucky-West Virginia Power Co.

Maryland—Pennsylvania Transmission Co. applied to Pennsylvania Public Service Comsn., Harrisburg, Pa., for permission to incorporate and extend two single-tower 220,000-volt transmission lines to the Pennsylvania-Maryland state line; transmit power to Consolidated Gas Electric Light & Power Co., Lexington Bldg., Baltimore, and to Pennsylvania Water and Power Co.

Miss., Scooba—Mississippi Power Co., Gulfport, rebuilding distributing system; extending high line.

Miss., Waynesboro—City voted against issuing \$69,500 bonds for installing municipal electric plant.

N. C., West Jefferson—Northwestern North Carolina Utilities, Inc., subsidiary of the Empire Public Service Co., 1600 Arch St., Philadelphia, Pa., plans hydro-electric plant at Sharpe's Falls on the north fork of New River, eight miles from West Jefferson; initial capacity 300 h. p.; 8-ft. dam on solid rock foundation; W. R. Beaughness, Local Counsel, Jefferson.

N. E., Wilson—City passed ordinance providing \$100,000 electric light bonds.

Okla., Lamont—City voted to sell municipal distribution system to Oklahoma Gas and Electric Co., 321 N. Harvey St., Oklahoma City.

Tex., Denton—City Comsn. passed resolution to create permanent fund for water and light improvements.

Garages and Filling Stations

Ala., Tuscaloosa—Woco-Pep Co., J. C. Robertson, erect service station; brick, 1 story, built-up roof, hollow tile partition; William Leslie Welton, Archt., American Traders Bldg., Birmingham.

D. C., Washington—Lord Baltimore Filling Stations, Inc., 133 Pennsylvania Ave., N. W., J. C. O'Connell, Engr. of Constr., American Bldg., Baltimore, Md., erect two filling stations.

Fla., Miami Beach—Sun Oil Co., 300 Alton Rd., plan service station, Biscayne Blvd.

Ga., Marietta—Standard Oil Co., 746 Marietta St., N. W., Atlanta, erect filling station, roof.

Ky., Ashland—Eaton-Steele Chevrolet Co., capital \$20,000, chartered; Sam L. Steele, W. O. Eaton.

La., Lafayette—J. R. Sonnier erect 1-story, brick automobile storage and service building to be leased by the Evangeline Hotel and L. A. Bourgeois; 125x50 ft.

Md., Baltimore—Atlantic Refining Co., 3144 Passyunk Ave., Philadelphia, Pa., and Keyser Bldg., Baltimore, plans filling stations, John St. and North Ave., and at Lombard & Fremont Sts.

Md., Baltimore—Union Trust Co., Baltimore and St. Paul Sts., proposes filling station, John St. and North Ave.

Md., Baltimore—Edward J. Gallagher, Sr., 3501 Ednor Rd., erect filling station Remington Ave., between 27th and 28th Sts., to be leased to Hercules Power Gasoline Co., 4100 Philadelphia Rd.

Md., Havre de Grace—Lord Baltimore Filling Stations, Inc., T. J. O'Connell, Engr. of Constr., American Bldg., Baltimore, let contract to Thomas F. Leonard, 2615 Brehms Lane, Baltimore, for filling station; stucco on brick, 1 story and basement, 16x32 ft.; tile floor; metal tile roof.

Mo., Cape Girardeau—Cape Oil Co. erecting oil and gasoline service station to be operated by Wm. Whitledge Service Co.

Mo., Kansas City—The Major-General Tire Co., 604 Grand Ave., Temple Bldg., capital \$75,000, incorporated; Merrill E. Major; T. J. Hargadon.

Mo., Jefferson—State Highway Comsn. open bids June 15 for garage building.

N. C., Winston-Salem—Mrs. George Brown, Robert D. Lee Hotel, erect tire service station, Seventh and Liberty Sts., to be occupied by Kurtz Tire Co.

Okla., Oklahoma City—C. C. Owens erecting \$18,000 garage; 1 story, 50x120 ft.; Wm. Neubauer, Contr., 421 W. California St.

Okla., Oklahoma City—Smiser Construction Co., 2300 N. Broadway, erecting storage, repair and sales room for Mrs. F. M. Knight, 904 W. 24th St.; brick and steel, 140x125 ft., 1 story, comp. roof.

Tennessee—Sinclair Oil Co., subsidiary of Sinclair Consolidated Oil Corp., 45 Nassau St., New York, leased 25 stations in East Tennessee of Volunteer State Oil Co.; to be operated as Sinclair stations; W. A. Fowler, Agent, Forest Hills Blvd., Knoxville.

Tex., Breckenridge—Daniel Motor Co., Inc., capital \$20,000, chartered; M. E. Daniel, G. P. Daniel.

Tex., Gladewater—Walter Bennett, Inc., capital \$20,000, chartered; W. H. Bennett, M. E. Daniel.

Tex., San Antonio—I. Meader, 1919 N. New Braunfels St., erect filling station, E. Houston St., for lease to Magnolia Petroleum Co., 227 Broadway; 1 story, brick.

Gas and Oil Enterprises

Fla., Miami—Silver Seal Oil Co., Inc., chartered; M. B. Adams, Ingraham Bldg.

Fla., Panama City—W. T. McCormick, Tampa, and S. M. Savage, Const. Engr., investigating Panama City with view to building gas plant; submit plan to City Comsn.

Ky., Martin—Martin Gas Co. incorporated; J. R. Baker, Leo Loeb.

Louisiana—National Gas Co., Ltd., incorporated in Delaware, acquired Lyons Gas Co., Inc., and Austin Gas Co., Inc., of Louisiana; transactions includes control of 7,000 acres of gas lands in Monroe, Waskom, Spencer and Richland fields in Louisiana and Texas; half interest in 31,000 acres of gas lands in Warren County, Miss., also acquired.

Miss., Clinton—Mayor and Board of Aldermen awarded gas franchise to F. Shields; lay pipe line and distributing mains.

Okla., Boise City—Knapp & Fredell, Amarillo, has contract to construct 75-mi. gas pipeline from Boise City to Dumas, Tex.; Texas portion of line for Panhandle Power & Light Co., Borger, Tex., and Oklahoma portion for Cimarron Utilities Co., Guyon, Okla.; both subsidiaries of Kansas City Power Securities Corp., 1330 Grand Ave., Kansas City, Mo.; Main line involves 6½-in. pipe from Dumas to Stratford, Tex., and 5½-in. pipe for balance; Panhandle company install distribution system at Stratford, and Cimarron company install system at Boise City, 5-7 under Texas and 3-19 under Oklahoma.

Okla., Okmulgee—M and M Oil & Gas Corp., Box 908, J. V. Roberts, Sec., construct 10½ miles 4-in. gas pipe line; \$20,000; Roy Wilson, Collinsville, labor contr.; Air Reduction Co., Lincoln Bldg., New York, furnishing oxygen acetylene and welding rod.

Okla., Shawnee—City probably award gas franchise to Western Service Corp., Oklahoma City.

Texas—Shell Petroleum Corp., St. Louis, Mo., reported, construct \$2,500,000 pipeline from East Texas field to Gulf Coast; reported 200 miles long, 10½-in. pipe.

Tex., Amarillo—Timms-Claude Oil Corp., capital \$120,000, chartered; L. W. Timms, Oliver-Eagle Bldg.

Tex., Corsicana—Wilson Stubbs Oil Co., capital \$30,000, chartered; W. M. Wilson, A. J. Mason.

Tex., Gilmer—Home Oil Co., capital \$35,000, incorporated; H. P. McGaughy, Pres.; D. B. Futrell, V. P.

Tex., Gilmer—Humble Oil & Refining Co., Humble Bldg., Houston, clearing 4-acre tract as site for erection of storage tanks.

Tex., Houston—United Gas Public Service Co. operating subsidiary of United Gas Corp., Esperson Bldg., taking over franchises, contracts and physical properties of its subsidiary, Dixie Gas and Fuel Co., now in process of liquidation; Dixie company distributes natural gas in Cleveland, Crosby, Dayton, Highlands, Humble, Liberty, Mt. Belvieu, Jonesville, Beaumont, Goodrich, Livingston, Lufkin, Orange, Sour Lake, Carthage, Garrison, Hallsville, Henderson, Jacksonville, Kilgore, Lindale, Longview, Marshall, Nacogdoches, Overton, Rusk, Scottsville, Swan, Timpson, Troup and Waskom.

Tex., Kilgore—Guaranty Petroleum Co. of Texas, chartered; C. C. Waldrop, Randolph Caldwell.

Tex., Kilgore—Magnolia Petroleum Co., Dallas, proposes \$2,500,000 pipeline from Kilgore to Corsicana; 100 miles long, 10-in. pipe; reported, ordered 100 miles of 12½-in. electric welded pipe from A. O. Smith, Corp., Milwaukee.

Tex., Longview—Humble Oil and Refining Co., Houston, construct \$1,350,000 pipeline from Longview to Shreveport, La.; to provide additional capacity of 20,000 to 24,000 barrels of oil; plan additional loop lines, including 25-mi. 8-in. loop between Joiner station and Jacksonville and from latter point to Groesbeck; reported, placed under order for 100 miles of 8-in. and 10-in. pipe with Youngstown Sheet & Tube Co. and National Tube Co.

Tex., Longview—Johnson, Wyche and Yarbrough Oil Co., capital \$50,000, incorporated; J. E. Johnson, R. E. Wyche.

Tex., Longview—Hawkeye Petroleum Corp., capital \$300,000, incorporated; J. W. Bigger, O. B. Walters.

Tex., Pittsburgh—Monitor Oil Co., capital \$100,000, chartered; James E. Smith, W. V. Schermerhorn.

Tex., Teague—Sinclair Pipeline Co., Sinclair Oil Bldg., Tulsa, Okla., building 12½-in. pipeline from station near Teague to connect with Joiner area near Henderson; Fredell Construction Co., Contr., Kane Bldg., Palestine.

Tex., Tennessee Colony—Texas Pipeline Co., subsidiary of the Texas Corp., 145 E. 42nd St., New York, installing station to pump oil to refineries at Port Arthur; also installing station in Cherokee County at Maydelle.

Tex., Tyler—Martin & Sladek Petroleum Co., capital \$25,000, incorporated; Ray L. Martin, Ben H. Powell.

Tex., Tyler—Feazel Davenport Corp., capital \$10,000, chartered; W. C. Feazel, E. D. Davenport.

Ice and Cold-Storage Plants

N. C., Winston-Salem—Crystal Ice and Coal Co., 512 N. Liberty St., erect fireproof cold storage plant, Marshall St., near Shallowford; brick and steel.

Iron and Steel Plants

W. Va., Wheeling—Stockholders of Wheeling Steel Corp. ratified change in financial structure. 5-7

Land Development

D. C., Washington—National Capital Park and Planning Comsn., Lieut.-Col. U. S. Grant, 3rd, Executive Director, having revised plan for Washington Monument gardens prepared by William A. Delano and Frederick Law Olmstead.

Fla., Boynton—Ridgeland Corp., capital \$25,000, chartered; W. P. Somerville, A. R. Cook.

Fla., Jacksonville—Forsyth & Julia, Inc., chartered; M. Rubin, 2063 Post St.

Fla., Miami—Kaydick Realty Corp., capital \$20,000, chartered; C. H. Marks, H. K. Livingston.

Fla., Miami Beach—P. H. Arthur, 341 Lincoln Rd., subdivide old Flamingo Golf course, Alton Rd.

Fla., Tampa—Gordon Properties, Inc., chartered; L. Gordon, 3306 McKay Ave.

Fla., West Palm Beach—La Serena Realty Co., chartered; C. H. Warwick, Jr., Harvey Bldg.

Ga., Atlanta—Ernest Durham developing 151 acres on Durham Dr. and Indian Creek Rd.; plans include golf course, airplane landing field, artificial lake, clubhouse and recreation park; electric plant under construction.

Ga., Atlanta—North Boulevard Park Co., A. J. Orme, Pres., Candler Bldg., improve addition to North Boulevard Park.

Ky., Louisville—John W. Clare Realty Co., capital \$15,000, incorporated; Dorothy Gunn, 1532 Catalpa St.

Md., Annapolis—Roland Thomas, Charles W. Smith, Louis N. Phipps, members of committee to develop 32-acre tract at head of Spa Creek as park.

Md., Baltimore—Frank Novak Junior Co., 55 Iglehart Bldg., incorporated; Frank Novak, 33rd St., John Requardt, Gunther Bldg.

Md., Baltimore—Sillery Bay Development Co., Inc., 1910 Windsor Ave., developing shore on Magothy River; includes clubhouse and casino, bath house, summer cottages; Bernard Evander, Archt., 20 E. Lexington St.

Md., Montgomery County—Construction department of Sears, Roebuck & Co., Arthington & Homan Sts., Chicago, in cooperation with New York capitalist, reported, plans development of 72-acre tract at Braemer Forest for subdivision. See Buildings, Contracts Awarded—Miscellaneous.

Mo., Kansas City—Wells Brothers Investment Co., incorporated; Harry W. Wells, 8310 Holmes St.

Mo., Kansas City—London Investment Co., incorporated; Henry S. Conrad, 901 National Fidelity Life Bldg.

Mo., Kansas City—Swisher Investment Co., 515 Grand Ave., Temple Bldg., incorporated; J. C. Ragland, Francis E. Swisher.

Mo., St. Louis—Northbourne Investment Co., incorporated; J. T. Woodroff, Pierce Bldg.

Mo., St. Louis—Net Realty and Investment Co., incorporated; Fred A. Eppenberger; Clarence M. Barksdale, 506 Olive St.

S. C., Greenville—Carlestate, Inc., chartered; W. D. Workman, Poinsett Hotel.

Va., Franklin—Douglas Corp., capital \$50,000, chartered; J. M. Camp, Pres.

Va., Norfolk—Holland Realty Corp., capital \$25,000, chartered; James E. Holland, Pres.

Va., Norfolk—Marlin Homes Corp., capital \$25,000, chartered; Edgar T. Henderson, Seaford Station.

Lumber Enterprises

Ark., Little Rock—Nowlin Lumber Co., 8th & Izard Sts., capital \$35,000, incorporated; E. C. Nowlin, Pres., 1623 W. 23rd St.; Harold J. Murphy, Sec., 806 Summit St.

Fla., Jacksonville—Foley Lumber Co., 36th and Main Sts., reconstruct building destroyed by fire.

Fla., Lacoochee—Cummer Cypress Co. acquired 2,000,000 ft. cypress timber rights on tracts located along Withlacoochee River; cut timber and haul to camp at Rutland Bridge.

Ga., Trenton—Baker Lumber Co., Southern Railway Bldg., Birmingham, Ala., installing kiln; Moore Dry Kiln Co., 843 Blanche St., Jacksonville.

S. C., Florence—Sparrow Lumber Co., Inc., H. G. Sparrow, Pres., erect 5 buildings, 40x100 ft.; wood construction, iron roof; owner builds; machinery to be installed includes planer, engine, dry kiln, veneer machinery, trimmer, clipper, edger, band resaw 6-4

Tex., Longview—Sumner Cragin Lumber Co., Inc., chartered; Sumner Cragin, W. Edwards Lee.

Mining

Fla., Jacksonville—White Shell Corp., chartered; A. Zetrouer, 1535 Main St., shell, rock.

Fla., Newberry—Land & Phosphate Co., chartered; J. E. Wideman, 245 Valencia Rd.

Fla., Zephyrhills—A. E. Hutchinson, 1033 Astrusia Ave., Coral Gables, and A. H. Chaney, both Miami, investigating rock deposits along Hillsborough River, about three miles south of Zephyrhills; may develop.

N. C., Charlotte—Sugar Creek Stone Co., capital \$50,000, incorporated; D. C. Dunn, 612 Grandin Rd.

Va., Tabscott—Goochland Mining Corp., organized under laws of Virginia, L. R. Cohn, Reading, Pa., Pres., obtained lease on approximately 500 acres of addition land in connection with reopening of Waller gold mine; have completed cleaning out of old workings of mine, deepening of shaft, examinations at cost of \$25,000; sink shaft to 500-ft. depth, with view to mining on large scale; projects includes machinery for treatment of ore; Leo Faust, connected with project. 6-4

Miscellaneous Construction

Arkansas—Bd. of Commrs., Tensas Basin Levee Dist., J. H. Hart, Sec., Delhi, La., opens bids June 19 for O'Possum Fork Repair and Enlargement in Desha County, Ark., about 10 mi. above Arkansas City; includes cutting out and refilling slide and placing river side enlargement; length of line 600 ft., crown 10 ft.; approx. contents 30,000 cu. yds.

Ark., Pine Bluff—Plum Bayou Levee Dist. of Pulaski, Jefferson and Lonoke Counties, Dr. J. R. England, Pres., Bd. of Commrs., repair and enlarge levees; W. D. Dickinson, Engr., Rector Bldg., Little Rock.

D. C., Washington—District Commrs., R. M. Brennan, Ch. Clk., Engineering Dept., advises all bids rejected for refuse incinerators and work will not be readvertised at present time. 3-26

Fla., Okeechobee—U. S. Engr. Office, Jacksonville, let contract to H. C. Nutting Co., P. O. Box 2985, Tampa, for core drilling in Lake Okeechobee, at \$19,968. 5-14

Louisiana—Bd. of State Engrs., D. C. Daniel, Sec., Baton Rouge, receives bids July 6 for Lake St. Peter Drainage Diversion, Tensas Parish, about five miles below St. Joseph; approx. length 14,000 ft., quantity 275,000 cu. yds.

La., Natchitoches—Bd. of Commrs., of 19th Louisiana Levee Dist., opens bids June 17 for Alligator Bayou Dike, Red River, left bank, Red River Parish, near East Point, approx. 500 ft. long, 29.0, 3.5 and 17.0 ft. high, 14,000 cu. yd.

La., Chalmette—Lieut.-Col. L. O. Mathews, Act. Q. M., Fort McPherson, Atlanta, Ga., let following contracts for work in U. S. National Cemetery: For curbs and resurfacing shell road, \$4765, to J. M. DeFraithe, Inc., Canal Bank Bldg., New Orleans; 12,000 cu. yd. filling, at \$5928 to D. G. Villers, 1926 Poydros St., New Orleans; metal fences and gates, \$1600, to J. M. DeFraithe, Inc.

Md., Herald Harbor, Waterbury—Shelton Park Corp., operators of Shelton Park, received permission from War Dept. to construct 100-ft. pier into Severn River.

Md., Salisbury—Atlantic Mausoleum Co., Inc., Albert Ferrar, Pres., Gen. Contr., 1563 Vernon St., Harrisburg, Pa., advises construction on mausoleum for Salisbury Parish will not be started until October or November. 5-28

Missouri—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, opens bids June 19 for constructing about 2770 lin. ft. standard pile clump and standard pile clump brace dikes and about 200 lin. ft. standard crib dikes, Missouri River, Marion Bend, 2 mi. from Marion.

Mo., Kansas City—M. A. Long Co., 10 W. Chase St., Baltimore, Md., has contract for \$200,000 1,000,000-bu. grain storage addition to Norris Elevator of Kansas City Southern Ry. Co., W. N. Dermus, Gen. Mgr.; Norris Grain Co., Lessee, 141 W. Jackson St., Chicago, Ill., and 940 Board of Trade, Kansas City; construction under way, to be completed Aug. 17. 4-30

Mo., Kansas City—Following have subcontracts for 4,000,000-bu. addition to grain elevator of Atchison, Topeka & Santa Fe Ry., G. W. Harris, Ch. Engr., Chicago, Ill., in Argentine Dist.: Pile driving, E. A. Whitney & Son, 610 City Bank Bldg.; steel, Kansas City Structural Steel Co., 21st St. and Metropolitan Ave.; excavation, List & Clark Construction Co., Ry. Exch. Bldg.; elec. wiring, MOK Electric Co., 112 E. 14th St.; rein. steel, Sheffield Steel Corp., Sheffield St., all Kansas City; steel roof, Detroit Steel Products Co., 111 W. Washington St., Chicago, Ill.; dust collecting system, Kirk & Blum Mfg. Co., 2838 Spring Grove Ave., Cincinnati, Ohio; machinery, Webster Mfg. Co., 1856 N. Kastner St.; motors, Westinghouse Electric & Mfg. Co., 20 N. Wacker Dr., both Chicago, Ill.; 30,000 cu. yd. excavation completed, 8000 wooden piles driven and cut off, 17,000 cu. yd. conc. placed and approx. 400 tons steel fabrications erected; first half to be ready to receive grain July 1 and second half 8 weeks later; John S. Metcalf Co., Gen. Contr., 105 W. Adams St., Chicago, Ill. 4-16

Mo., Kansas City—Kansas City Southern Ry. Co., W. N. Dermus, Gen. Mgr., let contract in few days for construction and for machinery and equipment for 550,000-bu. grain storage annex to elevator; contracts let for excavation and pile foundation and work is in progress; Moore-Seaver Grain Co., Lessee, 1000 Board of Trade. 5-21

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., soon take bids for crematory, 5800 Arsenal St., \$25,000; 1 story, brick, conc., 20x30 ft., conc. found. comp. roof, steel sash, gas burner; F. A. Updegraff, Archt., 329 Municipal Courts Bldg., 14th and Market Sts. 3-5

Mo., St. Joseph—City, F. R. Harrington, 2623 Tolson St., of Citizens Baseball Committee, plans rebuilding city stadium grandstand at once.

Mo., St. Louis—See Roads, Streets and Paving.

Missouri—War Dept., U. S. Engineer Office, Postal Telegraph Bldg., Kansas City, Mo., receives bids June 20 for 4440 lin. ft. standard pile clump dikes, Missouri River at Plow Boy Bend, 2.6 miles downstream from Lupus, Mo.

Okla., Tishomingo—State Bd. of Affairs, Capitol Bldg., Oklahoma City, has preliminary plans for fish hatchery on Pennington Creek near here, \$40,000; private plans.

S. C., Charleston—U. S. Navy Yard, Public Works Dept., J. T. Mathews, Public Works Officer, advises work of reconstructing building ways of rein. steel and conc. well under way by Navy Yard labor and it is expected project will be completed by Oct. 1, 1931. 5-21

Tenn., Fayetteville—Dept. of Commerce, Bureau of Fisheries, Commr. of Fisheries, Washington, D. C., advises not establishing fish hatchery at Warren Hollow. 6-4

Tenn., Memphis—U. S. Engr. Office, McCall Bldg., opens bids June 19 for 37,700 lin. ft. permeable pile dikes at various localities. 5-7

Tex., Fort Worth—Tarrant County, W. E. Yancey, County Aud., has plans complete, in hands of Highway Comsn., Austin, for \$37,000 rein. conc. retaining wall, Northwest Highway; Wesley Stevens, County Engr.; M. C. Welborn, Res. State Engr.

Tex., Happy—W. T. Townshend and Holland Toles let contract to Rochelle & Rochelle, Amarillo, for 40,000-bu. grain elevator; will have loading capacity at maximum speed of 100 bu. per min. or approx. 140,000 bu. daily; trackage will take cars of 40 cars; 15-bu. automatic scale and 15-ton truck scale.

Tex., Marble Falls—State Game Dept., Austin, making surveys for fish hatchery near large dam, now under construction, \$40,000.

Va., Newport News—Allen J. Saville, Inc., Richmond, has contract for yard office, scale house, store and shop building, toilet, wash and locker building, boiler house, at new coal pier for Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond. 7-24-30

Va., Yorktown—U. S. Dept. of Interior, National Park Service, Colonial National Monument, Oliver G. Taylor, Engr. in Charge, has low bid from E. E. Slight & Co., Yorktown, at \$7034, for repairs to commercial wharf and construction of 3 small piers. 5-28

W. Va., Point Pleasant—U. S. Property and Disbursing Office, Charleston, opens bids June 18 for swimming pool with filtration equipment, Camp Conley.

Miscellaneous Enterprises

Ala., Tuscaloosa—Thomas H. Maxwell. Woodbank Plantation, Route 1, interested in the establishment of a plant to manufacture paper from cornstalks and to prepare cornflakes and canned hominy on a large scale.

Ark., Fort Smith—Banfield Brothers Packing Co., Tulsa, purchased Fort Smith Packing Co., 1019 Grand St., and two subsidiaries; erecting of \$100,000 packing plant.

Ark., Stuttgart—Paul Daniels, Roy Roach, Ben Aoth and G. A. Meyers erect \$75,000 rice mill and elevator; 300,000 bushel capacity.

D. C., Washington—Dept. of Commerce, Bureau of Standards, George K. Burgess, Director, opens bids June 13 on main switchboard, transformers and electrical equipment and on June 12 for centrifugal pumps, including two large vertical pumps of 50 second-foot and 80 second-foot capacity, respectively, and four double suction centrifugal pumps ranging from 5 to 20 second-foot capacity; plans from H. N. Eaton, Room 4, West Building, Bureau of Standards.

D. C., Washington—Department of Commerce, Bureau of Standards, let contract for heat and power service duct for National Hydraulic laboratory to Continental Contracting Co., Fort Dodge, Iowa. 5-28

Fla., Fort Lauderdale — Tropical Rare Plant Nursery, Inc., chartered; K. Stumpp, J. Links.

Fla., Fort Pierce—Service Home Builders, Inc., capital \$10,000, chartered; G. A. Griffin, J. Griffin; building.

Fla., Hollywood—Leo Stetson and Reese Combs, 4309 N. W. Sixth Ave., acquired Hollywood Herald and Broward County Independent, newspapers; organized Hollywood Herald Co.; establish printing plant in building on Hollywood Blvd. formerly occupied by Postal Telegraph Co.; equipped for job printing.

Fla., Hollywood—Frigid Fruit Corp., chartered; A. Cleman, J. Renner.

Fla., Jacksonville—Florida Novelty Manufacturing Co., chartered; F. W. Loll, 3051 Phyllis St.

Fla., Miami — Papaya Tropical Products, Inc., chartered; S. F. Peavey, H. L. Nessly.

Fla., Miami—Fermo Research Laboratories, Inc., capital \$25,000, chartered; B. R. Chaplin, City Natl. Bank Bldg.

Fla., Miami—Coconut Products, Inc., chartered; W. C. Hill, A. Lucignani.

Fla., Miami—Seminole Awning Co., chartered; E. E. Roberts, Congress Bldg.

Fla., St. Augustine—Craig Funeral Home, Inc., chartered; A. H. Craig, E. B. Davis.

Fla., Tarpon Springs—Consolidated Spongers Supply Corp., chartered; N. G. Arfaras, J. Fassol.

Fla., West Palm Beach — Dyer Building Corp., chartered; C. D. Reese, 230 Brazilian St.

Fla., West Palm Beach—Postoffice Building Co., chartered; J. E. Wideman, 245 Valencia Rd.

Ga., Macon—Macon Peanut & Storage Co., capital \$65,000, organized; H. G. Ray, A. D. Harkins.

Ky., Danville—J. Robert Smith, Evansville, Ind., purchased half interest in Danville Daily Messenger, Inc.

Ky., Mount Vernon—Warren Carver, Engr., Lexington, interested in locating overall and shirt plant.

Ky., Pikeville—Pikeville-Nehi Co., capital \$10,000, chartered; J. B. DePuy, J. K. Hatmaker.

La., New Orleans—Insurance Securities Co., W. Irving Moss, Pres., Union Indemnity Co., New York Indemnity Co., LaSalle Fire Insurance Co., and Bankers and Merchants Fire Insurance Co., involved in consolidation.

La., New Orleans—New Orleans Box Factory, Inc., capital \$20,000, chartered; Clarence A. Angeletto, Pres.; Lloyd J. Stone, Sec.

Fla., Miami—Swift & Co., 48 N. W. 11th St., has building permit to remodeling cooling system at 48 N. W. 11th St.; \$35,000.

La., New Orleans—Haspel Brothers, Inc., St. Bernard near Broad St., Joseph Haspel, Pres., expand plant in connection with program to consume entire output of seersucker and Spanish linen cloth output of Lorraine Mills, Pawtucket, R. I.; install 150 new machines; add 200 employees; operate 12 month in the year instead of 9 months as previously.

Md., Baltimore—Interstate Amiesite Co., Inc., DuPont Bldg., Wilmington, Del., considering projects for increasing capacity of plant now 80% completed on property of Bethlehem Steel Co., at Sparrows Point; manufacture Interaco Stone Tread, Amiesite and other cold-lay asphaltic paving, using furnace slag as aggregate; plant designed for 900-ton daily capacity; R. P. Fletcher, Jr., V. P. and Gen. Mgr.

Md., Baltimore—Smith & Monson leased building 425-27 Grindall St.; manufacture soda fountains and supplies.

Miss., Leland—City, Mary P. Johnson, Clerk, receives bids June 30 for fire pump and oil engine.

Md., Baltimore—Crown Cork & Seal Co., Inc., Charles E. McManus, Pres., Eastern Ave. and Kresson St., constructing three cork storage buildings; West Construction Co., Knockbocker Bldg., Gen. Contr.; following subcontracts let: Steel sash and struc. steel, Dietrich Brothers, 220 E. Pleasant St.; drain lines, Scribner & Neuman, 601 N. Pulaski St.; roofing, Federal-American Cement Tile Co.; siding, Ambler Asbestor Sheathing and Shingle Co., Ambler, Pa.; glass, Swindell Brothers, Bayard and Russell Sts.; glazing and putty, Walsh Brothers, 115 W. 27th St. 2-6

Md., Rockville—Mrs. Wolfson erect dry cleaning plant; 2 stories, brick, 25x138 ft., steam heat, store front; apartments second floor; Howard W. Cutler, Archt.; following bidding: Geary-Johnson Co., Silver Spring; A. C. Warthen & Sons, Kensington; Morris Bros., Bethesda; F. H. Karn and Cook A. Robertson, Rockville.

Mo., Joplin—Junge Baking Co., 1806 Main St., making improvements; installing rotary oven; remodel and enlarge proof boxes; constructing mezzanine floor.

Mo., St. Louis—Skinner Heating & Ventilating Co., incorporated; Charles N. Skinner, St. Louis; Harry Parker, Kirkwood; manufacture unit heaters, air conditioning apparatus and heating systems.

Mo., St. Louis—Edgar Zinc Company, with plant located at Cherryville, Mo., for many years a subsidiary of the United States Steel Corp., 71 Broadway, New York, and under the supervision of the American Steel & Wire Co., 506 Olive St., has been directly absorbed by the latter company; at the present time no changes of any kind are contemplated for the Cherryville plant; for reasons of economy the maintenance of a separate corporate organization for the Edgar Zinc Co. has therefore been discontinued at St. Louis.

Mo., St. Louis—Welch-Stafford Monument Co., incorporated; Robert T. Welch, Central National Bank Bldg.

Mo., St. Louis—Od-Peacock-Sultan Co., 112 N. Second St., reported, soon ask bids on \$100,000 plant; 4 stories and basement, 40x125 ft.; manufacture pharmaceutical preparations; Clymonts & Heinicke, Archts., Wainwright Bldg. 4-16

Mo., St. Louis—Versailles Apartments, capital \$350,000, incorporated; S. Mayner Wallace, 314 N. Broadway.

Mo., St. Louis—National United Clothing Co., incorporated; Nathan Klearman, 1368 Shawmut St.

Mo., St. Louis—Bellinger Plumbing & Heating Co., incorporated; John Bellinger, 7713 Virginia St.

Mo., St. Louis—P-B Chain Manufacturing Co., capital \$30,000, incorporated; G. A. Brown, Brentwood, Mo.; anti-skid chains and accessories for automobiles.

Mo., St. Louis—Ice Cream Omelette Corp., 3826 Garfield St., capital \$15,000; Frank Snishaensel, Otto Spinner.

N. C., Durham—City Council authorized City Mgr. Flack to prepare specifications for fire pumping engine, to cost \$13,000; also improvements to Fire Station No. 2, \$8,870.

N. C., Elizabethtown—Cape Fear Peanut Co., capital \$100,000, incorporated; Ralph Boring, H. H. Clark.

N. C., Greensboro — Cockfield Tent and Awning Co., 724 S. Elm St., capital \$50,000, incorporated; H. W. Cockfield, 216 N. Spring St.

N. C., Lincolnton—Russell Creamery Co., capital \$25,000, incorporated; F. A. Russell, Floyd A. Russell, Jr.

N. C., Winston-Salem—Winston Leaf Tobacco & Storage Co., 12th St., ask bids June 8 on repairs to burned redrying plant; call bids in about two or three weeks on replacing storage shed. 5-7

N. C., Wilmington—Dow Chemical Co., Midland, Mich., C. A. Branson, construction superintendent, let contract to U. A. Underwood,

Inc., Murch Bldg., for first building of experimental plant for extraction of ethylene dibromide from sea water; company recently purchased property at Carolina Beach, 17 miles below Wilmington; J. E. Lefevre, purchasing agent. 5-28

Okla., Texhoma—Armstrong Bros., Contrs., started work on reconstructing Times printing plant.

S. C., Charleston—See Miscellaneous Construction.

Tenn., Columbia—Washington Manufacturing Co., installing 30 additional garment machines.

Tenn., Knoxville—Retail dairymen, including N. T. James, Fountain City, George T. Peters, Concord, A. S. McNew, Byington, and D. E. Bird, Powell's, members of committee, interested in erecting \$100,000 co-operative milk plant to serve Knoxville territory.

Tex., Brownsville—Las Ebanas Greenhouse Co., capital \$10,000, chartered; A. D. Dickinson, Jr.; A. K. Black.

Tex., Corsicana—F. P. McElworth Construction Co., capital \$200,000, chartered; F. P. McElworth, F. P. McElworth, Jr., E. B. Picton.

Tex., Dallas—Mauder Construction Co., capital \$25,000, chartered; J. E. Mauder, J. G. Pundt.

Tex., Greenville—Producers Milk Co., capital \$10,000, incorporated; S. K. McWhirter, E. L. Ingle.

Tex., Houston—Kling Supply & Manufacturing Corp., capital \$100,000, chartered; Joseph Klingensmith, John E. Sutte.

Tex., Lavernia—Lavernia Lumber and Trading Co., capital \$16,000, chartered; Hugo Kott, S. P. Wiseman.

Tex., Longview—Whitman, Inc., chartered; A. D. Whitman, Earl C. Sullivan; drilling.

Tex., San Antonio—Automatic Signal Service Corp., capital \$50,000, chartered; Ellis I. Haynes, J. E. Crosby.

Tex., San Antonio—Jacob Estrada, 108 S. Santa Rosa, erect addition to bakery and cafe; Leo M. J. Dielmann, Archt., 306 E. Commerce St.

Tex., San Antonio—Mike, the Cleaner and Dyer; Mike Maniatis, 528 E. Courtland St.; laundry.

Va., Fairfield—American Tar Products Co., Kappers Bldg., Pittsburgh, Pa., reported, make \$150,000 plant improvements.

Va., Fredericksburg—Sylvania Industrial Corp., H.H. Replogle, V. P., 122 E. 42nd St., New York, let contract to Hughes-Foulkrod Co., 1505 Race St., Philadelphia, Pa., for three buildings, which with equipment will cost approximately \$1,000,000; increase number of employees by 150; manufacture Sylphrap, transparent paper; The Ballinger Co., Archts. and Engrs., 12th and Chestnut Sts., Philadelphia, and 100 E. 42nd St., New York. 5-28

Va., Norfolk—Seaside Theatres, Inc., chartered; Ivor A. Page, Jr., Atty., Natl. Bank of Commerce Bldg.

Va., South Boston—Boston Construction Co., Inc., chartered; M. C. Turner, pres.

Va., Suffolk—January's, Inc., capital \$25,000, chartered; Hilary M. January; clothing manufacture.

W. Va., Huntington—Newcomb Dairy Co., 16th St. Rd., incorporated; William C. Graham, First Huntington Natl Bank Bldg.

W. Va., Huntington—State Game, Fish and Forestry Comsn., Charleston, purchased 20-acre site at Greenbottom for forestry nursery and quail hatchery.

Motor Bus Lines and Terminals

Fla., Jacksonville—National Trucking Co., chartered; S. Walter, Atlantic Bank Bldg.

Fla., Miami—Blue and Gray Cab Co., capital \$20,000, chartered.

Ga., Atlanta — Southeastern Greyhound Lines, Inc., erect \$55,000 bus station, Carnegie Way and Spring St.; 1 story, 20,000 sq. ft. space; include barber shop, news and fruit stand, check room, Travelers' Aid room, restaurant, shower baths; Hentz, Adler & Shutz, Archts., Candler Bldg.

N. C., Greensboro—Universal Cab Co., 364½ S. Elm St., capital \$25,000, chartered; A. M. Reddick, 6 Westminster Ct.

Tenn., Chattanooga — Nashville-Chattanooga Property Co., John O. White, Sec., erect \$32,000 bus terminal, Market St., at Tenth; Marr & Holmann, Archts., Stahlman Bldg., Nashville.

Tenn., Memphis — Consolidated Bus Co., Dixie Greyhound Lines, Smith Motor Coach Co., 144 N. Front St., and Missouri Pacific

Lines, Shrine Bldg., alter building for bus terminal, East of Monroe, between Second and Third Sts.; Consolidated Contractors, 6558 East St., low bidders. \$28,535; Anker F. Hansen, Archt., Shrine Bldg. 3-12

Tenn., Memphis—Dixie Greyhound Lines, Inc. and Smith Motor Coach Co., 144 N. Front St., Lessees of garage and service building to be erected Adams Ave. and High St. by L. E. McKnight, 3601 Spottswood St.; brick, 1 story, 115x315 ft.; Memphis Construction Co., 160 Union Ave., low bidder, \$59,864; Hughes Heating Co., 672 Madison Ave., low on heating, \$10,670; Prescott Plumbing Co., 1730 Evelyn St., low on plumbing; Wm. Slater Electric Co., 134 S. Second St., low on wiring; Jones, Furbinger & Jones, Archts., Porter Bldg. 4-16

Tex., Fort Worth—Interurban Express and Baggage Lines, Inc., chartered; A. F. Townsend, 2345 Mistletree Bldg.

Va., Norfolk—State Corp. Comsn., Richmond, authorized Horton Motor Lines to establish motor bus freight service between Norfolk and Richmond and Charlotte, N. C.

W. Va., Bluefield—The ET and WNC Motor Transportation Line, Johnson City, Tenn., received permission from State Road Comsn. to operate bus line in Bluefield; O. O. Barker, Madison, has permit to operate line between Madison and Barrett.

Railways

Alabama-Florida—Port Dixie-Northern R. R. being formed to build 145-mi. railroad, Port Dixie, southern Okaloosa County, Fla., to Andalusia, in Southern Alabama; J. M. Hodgskin, Pres., New York; Mallie Martin, V.-Pres., Crestview, Fla.

Md., Baltimore—Pennsylvania R. R., W. W. Atterbury, Pres., Philadelphia, Pa., build 3250 additional merchandise containers, as part of program for expansion of service to all important freight terminals, at company's shops at Enola, Pitcairn and Altoona, Pa., involving \$1,500,000.

Va., Norfolk—Seaboard Air Line Railway, L. R. Powell, president and co-receiver, placed order with Tennessee Coal, Iron & Railroad Co., Birmingham, for 3855 tons of rail; make further purchases of material, expend approximately \$3,500,000.

West Virginia—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., applied to Interstate Commerce Comsn., for permission to acquire 17 mi. of line, Mercer and Raleigh Counties, for completion of development of Piney Creek section.

Roads, Streets and Paving

In connection with LAND DEVELOPMENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ark., Gurdon—City, Paving Dist. No. 1, has Frank Gerig, Engr., Arkadelphia, making survey for paving.

Ark., Mountain Home—Baxter County, R. M. Ruthven, County Judge, plans several farm-to-market roads.

Ark., Texarkana—Street Improvement Dist. 55, D. B. Owen, created by City Council; grade, drain, curb, gutter and pave several streets and construct storm sewers, \$23,000.

D. C., Washington—Comms., District of Columbia, Dist. Bldg., open bids June 15 for 60,000 cu. yd. grading.

Georgia—State Highway Comsn., J. W. Barnett, Chmn., Atlanta, plans widening Forsyth road, Macon City limits to Crumps Park, Bibb County, \$10,000.

Kentucky—State Highway Comsn., Frankfort, receives bids June 24 for 6.941 mi. grading and draining on Hindman-Lackey Rd., Hindman to near mouth of Long Fork Creek, Knott County, F. A. Proj. 237 AG.

Ky., Louisville—U. S. Engr. Office, P. O. Box 72, has low bid from Frank G. Breslin, Breslin Bldg., at \$26,883 for conc. road on reservation of Lock and Dam 41, Ohio River.

LOUISIANA—State Highway Comsn., O. K. Allen, Chmn., Baton Rouge, has low bids totaling \$5,019,023, for 33 roads (conc. unless otherwise designated) and bridge in following parishes:

Allen-Jefferson Davis—10.74 mi., Route 24, Mills Engineering Construction Co., Weil Bldg., Alexandria, \$233,490; 14.551 mi. grading, draining, Route 25, Dixie Development Co., Alexandria, \$55,242; 10.511 mi., Route 7, Mills Engineering Construction Co., \$254,125;

Calcasieu-Beauregard—9.924 mi., Route 42, Couch Construction Co., Dothan, Ala., \$230,180;

Bossier—15.7 mi., Route 10, T. S. Clements, 332 Columbia St., Shreveport, \$286,228;

Calcasieu—4.922 mi., Route 104, Moore Bros. Co., Inc., Weber Bldg., Lake Charles, \$129,500;

East Carroll-Madison—10.606 mi., Route 3 Sullivan, Long & Haggerty, Bessemer, Ala., \$224,371;

Lafayette-St. Martin—3.852 mi., Routes 43 and 5, Barber Bros. Construction Co., Baton Rouge, \$189,540;

Natchitoches-Rapides—7.342 mi., Route 20, R. W. Briggs & Co., New Orleans, \$182,000;

Ouachita-Richland—12.346 mi., Route 15, S. Monroe & Son Co., Portsmouth, Ohio, \$276,496;

Pointe Coupee—6.704 mi. conc., Route 30, Southern Paving Construction Co., Volunteer Life Bldg., Chattanooga, Tenn., \$171,863; 14.424 mi. grading, draining, Route 30, Vollmer & Son, Inc., \$77,230;

Rapides—9.691 mi., Route 20, R. W. Briggs & Co., \$264,193; 10.33 mi. grading, draining, Routes 205 and 24, Shuptrine Construction Co., Oakdale, \$73,418;

Sabine—10.3 mi., Route 42, Barber Bros. Construction Co., \$245,665;

St. Martin—9.101 mi., Routes 43 and 25, Barber Bros. Construction Co., \$198,839; 11.675 mi., Route 25, no bids received; call for bids recalled prior to letting;

Tensas—8 mi., Route, Bishop & Weir, Inc., Detroit, Mich., \$171,171; 21.067 mi. asphaltic surface treatment, Route 3, Highway Engineering Construction Co., \$169,078;

Vermilion—10.98 mi., Route 25, Southern Paving Construction Co., \$258,134; 10.9 mi., Route 42, Barber Bros. Construction Co., \$241,047;

Avoyelles—17.564 mi. asphaltic surface treatment, Routes 30 and 72, R. B. Tyler Co., 1446 Levering St., Louisville, Ky., \$80,097;

Catahoula—10.522 mi. asphaltic surface treatment, between Harrisonburg and Sicily Island, T. L. James & Co., Ruston, \$71,685;

Evangeline—14.58 mi. asphaltic surface treatment, Routes 22 and 218, Flenniken Construction Co., American Bank Bldg., Shreveport, \$30,698;

Landry-Evangeline—14.4 mi. asphaltic surface treatment, Route 7, no bids; call for bids recalled prior to letting;

Jefferson-St. Charles—20.25 mi. asphaltic surface treatment, Route 2, Merritt Chapman & Williams Corp., New Orleans, \$162,841;

Lafourche—6.25 mi. asphaltic surface treatment, Route 2, Merritt Chapman & Williams Corp., \$53,996;

Madison—12.724 mi. asphaltic surface treatment, Route 3, Highway Engineering & Construction Co., Selbyville, Del., \$96,483;

St. Charles-Lafourche—15.33 mi. asphaltic surface treatment, Route 2, Merritt Chapman & Williams Corp., \$117,111;

Washington—11.95 mi. asphaltic surface treatment, Route 34, Royce Kershaw, Inc., Mobile, Ala., \$112,059;

Iberville-Ascension—10.197 mi. grading, draining, between White Castle and Donaldsonville, Carey Construction Co., New Orleans, \$74,287;

Jefferson Davis—13.576 mi. grading, draining, Routes 2 and 24, Midland Construction Co., Alexandria, \$72,025;

Evangeline-Acadia-Jefferson Davis—4.971 mi. grading, draining, Route 7, Dixie Development Co., Inc., Alexandria, \$21,473;

Natchitoches-Red River—13.219 mi. grading, draining, Route 20, J. C. Neal, Hermitage, Ark., \$60,332;

Terrebonne-Lafourche—0.675 mi. grading, draining, Route 24, Ruth Construction Co., Inc., Franklin, \$111,430;

Lafayette—bridge between Lafayette and New Iberia, H. Pratt Farnsworth, Canal Bk. Bldg., New Orleans, \$55,225. 5-7

La., Bunkle—Town, Mayor and Bd. of Aldermen, opens bids July 7 for \$50,000, not to exceed 6% paving bonds. 6-4

La., Crowley—City, Mayor and Bd. of Aldermen, opens bids July 9 for paving N. Parkerson Ave., including curbs and gutters, storm sewers, manholes and inlets; Merrill Bernard, City Engr.

La., Ferriday—City, Mayor and Council, opens bids June 11 for improving several streets; 7400 sq. yd. pavement, 2500 cu. yd. earth excavation, 4440 lin. ft. 6x18-in. com-

bined conc. curb and gutter, 500 lin. ft. conc. header or Maricopa section, etc.

La., New Orleans—City pave 13 streets in second 1931 paving program; City Council instructed clerk to advertise intention of city to pave 13 streets, majority in downtown section; subsurface drainage to be installed where practicable.

La., St. Francisville—Supvrs. of Road Dist. 4, West Feliciana Parish, Courthouse Bldg., open bids June 16 for 1.5 mi. grading, draining, Whittaker Springs bridge to New Hope; 1 mi. grading, draining, New Hope to Watson Place; 1 2/3 mi. grading, draining, from State Route 258 to Warren Woods.

MARYLAND—State Roads Comsn., L. H. Stuart, Sec., Baltimore, opens bids June 16 for 5 roads and bridge in following counties:

Baltimore—1.57 mi. conc., Falls road north of Blackrock toward Carroll County line, B-197-44;

Carroll—1.04 mi. conc., Hampstead toward Mexico, C1-96-52;

Cecil—1.52 mi. conc., Fair Hill to Pennsylvania State line, Ce-110-24;

Harford—1.52 mi. macad., Churchville-Dublin road, Trappe Church to Conowingo road, H-123-42;

St. Mary's—2.27 mi. gravel, Newmarket-All Faith Church road, Sm-83-84;

Worcester—7.62 mi. conc. shoulders, Berlin-Delaware State Line road, Wo-101-111;

Howard—extending existing stone masonry bridge on National Pike, about 5 mi. west of St. John's Lane, Ho-97-511.

MARYLAND—State Roads Comsn., L. H. Stuart, Baltimore, has low bid for 4 roads in following counties:

Cecil—3.25 mi. conc., Port Deposit-Cathers Corner road, Ce-58-22, G. & L. Contracting Co., 3509 Northern Pkwy., Baltimore, \$39,165;

Charles—1.48 mi. gravel, Cross Roads-Liverpool road, Ch-104-82, Dundalk Construction Co., Dundalk, Baltimore, \$13,975;

St. Mary's—1.02 mi. gravel, George Creek road to Piney Point, Sm-84-82, Pembroke & Gasporovic, Park Hall, \$7471; 1.13 mi. gravel, Manor road, Chaptico-Maccos road toward Huery, Sm-85-84, H. H. Hewitt & Sons, Valley Lee, \$9183. 5-28

Md., Fort George G. Meade—Constructing Quartermaster opens bids July 3 for service roads, sidewalks, water lines, sanitary and storm sewer lines, manholes and catch basins for officers' and non-commissioned officers' areas.

Md., Laurel—City, J. H. Fetty, Mayor, expend \$10,000 for street improvement.

Mississippi—State Highway Comsn., Paul Claxton, Engr., started survey of new proposed route of Highway 61 to connect with Memphis Gulf Coast Highway.

Miss., Jackson—City, Mayor and Bd. of Comms., has low bids for paving, curbing and guttering several streets: From B. E. Walker Construction Co., Standard Life Bldg., on curb and gutter, sidewalk and grading; Dunn Construction Co., Merchants Bank Bldg., on conc. base, \$1.08, asphaltic conc. oil, mesh reinforcement, black base, sheet asphalt.

MISSOURI—State Highway Comsn., T. H. Cutler, Ch. Engr., Jefferson City, has low bids for 77 roads in following counties:

Benton—1.190 mi. gravel, 65-67A, A. E. Keith Construction Co., 614 City Bank Bldg., Kansas City, \$14,395;

Boilinger—3.284, 3.731 mi. gravel, SA-1, SA-1, Carte-Harlin Construction Co., West Plains, \$18,902, \$15,131;

Madison—1.934 mi. gravel, Ref. 3, SA-1, Carte-Harlin Construction Co., \$10,648;

Boone—2.841 mi., shale or crushed stone, SD-1, SD-2, Samples & Elsea, Kirksville, Alt. 1, \$13,610; Alt. 2, \$11,511; Alt. 1, \$17,087, Alt. 2, \$15,081;

Callaway—4.100, 4.994, 3.617, 0.764, 3.398, 0.249 mi. 20-ft. conc., 97-A, 97-B, 97-C, 97-D, 97-F, 63-44, Harrison Engineering & Construction Corp., 506 Mutual Bldg., Kansas City, \$69,934, \$54,019, \$42,328, \$16,741 \$49,572, \$6488;

Chariton—4.209, 3.238 mi. 30-ft. graded earth, 337A, 337B, B. F. Brooks Construction Co., Inc., Love Field, Dallas, Tex., \$20,669, \$21,462;

Clark—0.139, 4.812 mi. gravel, 4-73, 4-76, Martin Wunderlich, St. Paul, Minn., \$508, \$52,362;

Scotland—4.285, 0.711, 1.187 mi. gravel, 310G, 4-71, 4-72, Martin Wunderlich, \$69,736, \$2014, \$2765;

Dallas—4.891, 4.580, 3.990 mi. gravel 64AP-61, 64AP-62, 64AP-63, Martin Wunderlich, \$33,216, \$19,408, \$82,888;

Laclede—2.549, 4.628, 4.935 mi. gravel, 64AP-64, 64AP-65, 64AP-66, Martin Wunderlich, \$26,873, \$20,532, \$42,942;

Davless—2.248, 2.983, 2.854, 3.392 mi. 20-ft. conc., 300C, 300D, 300E, 300F, Carlon Construction Co., Maplewood, \$18,756, \$35,062, \$33,844, \$43,965; 3.295 mi. chas., SJ-3, Pewett & Hardy, Shelbyville, \$17,110;

Franklin—3.643 mi. gravel, SM-2, Carte-Harlin Construction Co., \$26,441; 4.537, 3.606 mi. 20-ft. conc., 326B, 326C, Hoeftken Bros., Belleville, Ill., \$44,814, \$47,450;

Gasconade—4.549, 4.936 mi. 20-ft. conc., 326A, 326G, Hoeftken Bros., \$43,088, \$41,141; **Lafayette**—3.636 mi. 30-ft. graded earth, 23AP-1, L. W. Spengler Construction Co., 708 New York Life Bldg., Kansas City, \$37,189;

Lawrence—3.411, 3.046, 4.089 mi. 20-ft. bit. retread, 60-14A, 60-15A, 60-16B, Alt. 1 on all, Armstrong Paving Products Co., Des Moines, \$19,355, \$18,009, \$23,479; Alt. 2 on all, W. A. Ross Construction Co., N. W. 25th and Summit Sts., Kansas City, \$19,512, \$18,136, \$23,672;

Lewis—4.545, 5.545, 4.580 mi. gravel, 6AP-1A, 6AP-2A, 6AP-3A, Martin Wunderlich, \$27,977, \$27,776, \$28,181;

Marion—3.481, 3.051 mi. gravel, 6AP-4A, Martin Wunderlich, \$21,142, \$19,011;

Livingston—3.731, 1.500 mi. 10-ft. conc., 320A, 320B, Carroll Construction Co., Carrollton, \$29,817, \$11,701;

Madison—2.829 mi. 24-ft. graded earth, SH-1, Campbell, Davis & Shultze, Troy, \$14,397; 4.988 mi. 24-ft. graded earth, SH-2, Carte-Harlin Construction Co., \$59,521; 4.919, 3.440 mi. gravel, SN-1A, SN-2A, Fellin Bros., Marshfield, \$20,838, \$14,251;

Montgomery—3.298, 3.217 mi. gravel, 19-75, 19-88, Martin Wunderlich, \$18,074, \$25,774; **New Madrid**—1.799 mi. gravel, SC-2A, Don Pike, Competition, \$13,561;

Femiseot—3.500 mi. gravel, SE-1, Lahar Construction Co., Boonville, \$18,040;

Pike—4.393, 0.730, 2.075 mi. 29-ft. conc., 257-G, 275-D, 277-A, W. C. Meneely Co., Clayton, \$72,902, \$75,339, \$21,096;

Randolph—4.629, 4.462 mi. gravel or crushed stone, 331-C, 331-D, Pittsburgh-Des Moines Steel Co., Des Moines, Ia., Alt. 1, \$41,587, Alt. 2, \$47,126, Alt. 1, \$48,783, Alt. 2, \$64,498;

St. Francois—3.023 mi. gravel, SA-1, Carte-Harlin Construction Co., \$22,811;

St. Louis—3.779 mi. 20-ft. conc. widening, 20-ft. asphaltic conc., 61-69, Chas. N. Lund, Alt. 1, \$121,178, Alt. 2, \$109,782; 2.011 mi. 20-ft. conc., 77TR-1, Geo. W. Condon Co., Omaha, Neb., \$102,326;

Stoddard—2.833, 2.653 mi. 20-ft. conc. and 10 and 20-ft. conc., 118B, 89C, Jos. Kesl & Sons, Edwardsville, Ill., \$65,394, \$40,700;

Texas—0.983, 7.657, 5.000, 3.672, 3.125, 4.812 mi. gravel, 63-SI, 32-1A, SA-1A, SA-1A, SA-2A, SA-4A, SA-5A, Glenn E. Stoner, Charleston, Mo., on first, \$24,722; Chaney & Amyx, Branson, on rest, \$19,255, \$38,332, \$21,155, \$24,621, \$41,339;

Vernon—2.718, 3.323 mi. 20-ft. conc., 264-C, 264-D, Independent Construction Co., Pittsburg, Kans., \$57,279, \$60,200;

Washington—1.045 mi. gravel, SA-1A, Linus Penzel, Jackson, Mo., \$12,474;

Worth—2.231 mi. gravel, 48-11, Martin Wunderlich, \$19,296;

Wright—2.999, 2.831 mi. gravel, SD-6, SD-7, Chaney & Amyx, \$9,670, \$8,990. 5-21

Mo., Clayton—City, Alfred H. Kerth, City Clk., opens bids June 26 for side east side Hanley road, Forsythe Blvd., southwardly to point south of bridge abutment Rock Island R. R. to connect with present sidewalk.

Mo., Eldon—City, E. H. Austin, Clk., plans paving 7 blocks, main business street; J. W. Shikles & Co., Conslt. Engrs., 708 New York Life Bldg., Kansas City.

Mo., St. Joseph—City, Bd. of Public Works, has low bids for paving: Repaving Fifth St., Edmond to Sylvania, P. P. Young, R. E. D. 6, \$34,551; Sylvania to Patee, Koch & Bridgeford Construction Co., \$16½ Francis St., \$17,361; Fifth St., rein. conc., P. P. Young, \$34,551; 17th St., conc., Judson Engineering & Construction Co., 1811 Foran St., \$6418; Harvard St., asphaltic conc., Land Construction Co., Corby Bldg., \$736.

Mo., St. Louis—City, Bd. of Public Service and Citizens' Bond Issue Supervisory Committee approved appropriation of \$199,000 from bond funds to widen proposed North 12th Blvd., between Washington Lucas Ave.

Mo., St. Louis—City, Bd. of Public Service, City Hall, soon takes bids for walks, driveways, subway, electric fountain, pool, parking lots, rest house, Aloe Plaza, \$200,000; also opens bids for improving streets and alleys.

Mo., St. Louis—City, Streets Committee of Bd. of Aldermen, approved five bills for street paving to cost \$176,766.

N. C., Durham—City plans paving downtown section of Pettigrew St.

Oklahoma—State Highway Comsn., Sam R. Hawks, Chmn., Oklahoma City, has apparent low bid from Park & Co., and Ryan-Richards, Inc., both at \$461,275, for 31.7 mi.

paving, U. S. 66 between Bridgeport and Clinton; state to furnish cement and steel.

Tennessee—State Dept. of Highways and Public Works, Nashville, has low bid of \$81,281 from W. F. Bowe, Jr., 540 Reynolds St., Augusta, Ga., for paving 4 mi., Wilson County. 5-28

Texas—State Highway Comsn., Austin, receives bids June 23 for 8-span rein. conc. deck girder bridge over Sycamore Creek, Tarrant County; spans 28-ft. 6-in., roadway, conc. bents and abutments; St. Aid Proj. 958-A; Gibb Gilchrist, Engr.

Tex., Channing—Hartley County Commrs. authorized 600-ft. bridge over Punta de Auga Creek, Romero-Channing Highway.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., opens bids June 22 for 3 roads in following counties:

Callahan-Eastland—3.306 mi. double bitum. surface treatment, Highway 23, Eastland County line to Shackelford County line, Job M-8-Q-3, and 13.614 mi. double bitum. surface treatment, Highway 23, Cisco to Callahan County line, M-8-R3, 124,333 gal. asphalt, 25,708 cu. yd. aggregate;

Red River—7.5 mi. double bitum. surface treatment, Highway 49, Bogota south to Trent Lake.

TEXAS—State Highway Comsn., Gibb Gilchrist, Highway Engr., G. G. Wickline, Bridge Engr., both Austin, plans road and 2 bridge projects in following counties:

Mason—rein. conc. bridge over Comanche Creek, Highway 9, 292 ft. long, 22-ft. roadway, project including approaches 16,279 ft., \$50,000;

Robertson—12 steel, conc. and timber pile trestle bridges, 22-ft. roadway, 104 ft. total length, consist of steel I-beam spans and conc. floor superstructure and timber pile trestle substructure, PAP 582-C, \$60,000;

Jasper—1½-in. Duraco pavement on 6-in. conc. base, Highway 8, 63 and 45, covering paving on Main St. and Houston, Jasper; city to share cost.

Tex., Dallas—City Council approved City Plan Comsn.'s request for realignment of approaches to underpass proposed, Lamar St. and McKinney Ave., connecting with viaduct at that point.

Tex., Galveston—Galveston County Commrs. Court authorized calling for bids for surfacing 3 mainland roads.

Tex., Houston—City, J. M. Nagle, Engr., plans several paving projects: Drawing plans for widening and repaving Louisiana St. between Dallas and Berry Ave., to 60 ft., \$130,000; for paving Dunlavy St. between Buffalo Dr. and Welch Ave., 40 ft., \$50,000; for paving Houston Ave. between Washington Ave. and Spring St., 72 ft., \$40,000; 20th Ave. between N. Main and Rutland St.; plans paving Nance St. between N. San Jacinto and Hill St.

Tex., Houston—City, J. M. Nagle, City Engr., plans draining, permanent paving Alameda road south of Brays Bayou bridge to city limits, costing \$87,600; 2 roadways, 26 ft. wide, separated by esplanada 88 ft. wide! has tentative plans for paving Dunlavy St., N. Main St., and E. 20th Ave., each 43 ft. wide.

Tex., Leaky—Real County expend \$85,000 bonds for roads. See Financial News Columns.

Tex., Pelly—City plans expending \$25,000 for street improvements.

Tex., San Antonio—City, I. Ewig, City Engr., opens bids June 15 for 2-in. topping, Fredericksburg road extension.

Tex., San Antonio—City, I. Ewig, City Engr., opens bids June 22 for conc. Brackenridge Park bridge, East Mulberry and Broadway over San Antonio River.

VIRGINIA—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, opens bids June 23 for 4 roads in following counties:

Giles—3.2 macad., Route 23, Rick Creek to West Virginia line;

Princess Anne—2 mi. gravel, Route 502, at approaches to Lake Smith;

Frederick—1.5 mi. macad., Route 37, eastern corporate limits of Winchester to 5.6 mi. west of Berryville;

Smyth—2 mi. macad., Route 10, approaches at Seven Mile Ford.

Va., Clarendon—Arlington County Supvrs. authorized constructing sidewalks along Clements Ave. in Clarendon leading to Washington-Lee High School, along Lee Highway to Robert E. Lee School and along Wilson Blvd. to Woodrow Wilson School; let contract to Corson & Gruman, 33rd and C Sts., N. W., Washington, for resurfacing county roads.

Va., Fort Myer—War Dept., Q. M. Dept., Washington, D. C., receives bids June 22 for curbs, gutters and catch basins, new roadway between Grant Circle and Memorial Amphitheatre in Arlington Cemetery.

W. Va., Clarksburg—City plans improving streets in connection with state highway improvement through city.

Contracts Awarded

La., Ferriday—City, P. H. Corbett, Mayor, let contract to J. B. McCrary Co., Citizens & Southern Bank Bldg., Atlanta, Ga., for .5 mi. 24-ft. paving, \$30,000. 5-28

La., Marksville—City, Mayor and Bd. of Aldermen, let contract to Barber Bros. Construction Co., Baton Rouge, for 1880 sq. yd. conc. paving.

Okl., Oklahoma City—City, Bd. of Public Works, let contract to W. L. Hammit, at \$51,836, for paving Districts 10, 11 and 12, Nichols Hills Addition; rejected bids for work in Districts 9 and 13, new bids to be called for later; plans by Benham Engineering Co., Perrine Bldg.; let contract to Connelly Bros. Paving Co., Magnolia Bldg., for paving intersection of Western Ave. with 37, 38, 39, 40, 41st and 42nd St.

Tenn., Chattanooga—Hamilton County Highway Comsn. instructed E. G. Murrell, County Engr., to surface Ochs Highway on eastern slope of Lookout Mountain; county forces.

Tex., Beaumont—City, R. C. Black, City Engr., let contract to Uvalde Rock Asphalt Co., Weiss Bldg., for resurfacing College St., at \$11 per ton for duraco in place.

VIRGINIA—State Dept. of Highways, C. S. Mullen, Ch. Engr., Richmond, let contracts for 14 roads and bridge and withdrew advertisement on another in following counties:

Hanover—6 mi. conc. widening, Route 31, S260AW, Robert G. Lassiter & Co., Raleigh Bank and Trust Bldg., Raleigh, N. C., \$80,460;

Russell—6 mi. gravel, Route 11, S306C1, Longley & Co., Inc., Bluefield, W. Va., \$13,510; alt. \$11,168;

Smyth—8 mi. macad., Route 10, S361FG, John A. Archer & Son, Ivanhoe, \$10,057;

Patrick—3 mi. grading, Route 23, S507C, Barye & Blankenship, Shawsville, \$30,543;

Warren—9 mi. shale, Route 55, S416D, withdrawn from advertisement;

Augusta-Rockbridge—9 mi. slag and gravel, Route 17, S380A1&449A1, Nello L. Teer, Durham, N. C.;

Buckingham—3 mi. soil, Route 306, S590D, J. A. Marrows Construction Co., Clarksville, Va., \$25,428;

Westmoreland—8 mi. grading, draining, Route 607, S656-C, Perkins-Barnes Construction Co., Blackstone, \$19,046;

Bedford—5 mi. soil, Route 204, S678A, C. A. Ragland, Louisburg, N. C., \$19,162;

Henrico—2.5 mi. gravel, Route 420, C. S. Luck & Sons, 1617 Brook Rd., Richmond, \$16,233;

Middlesex—4 mi. grading, draining, Route 30, S682AC, R. E. Mitchell, Tappahannock, \$8,560;

Buckingham-Prince Edward—5.5 mi. soil, Route 32, F692A, C. A. Ragland, \$27,020, bridge over Appomattox River, F692B1, Perkins-Barnes Construction Co., \$10,693;

Charlotte—2 mi. Route 20, J. A. Marrow Construction Co., \$13,076; 1.7 mi. soil, Route 44, \$8,144, same Contr. 5-21

Va., Clarendon—See Proposed Construction.

W. Va., Parkersburg—City, Burdette Woodyard, Supt. of Streets, Parks, etc., L. G. Merrill, City Engr., let contracts for rein. conc. paving; D. A. Criss & Sons, E. Seventh St., for Briant St., at \$6126, and for 23rd St., at \$14,437; to J. D. Ankrom, 1040 Quincy St., for Eastlawn, Clyde and Mameason, at \$14,110, for Eighth St., at \$3138, and 17th, \$2040.

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

Ark., Benton—State Construction Comsn., Little Rock, let contract at \$23,000 for sanitary-storm sewer system, State Hospital for Nervous Diseases. 5-28

Ark., Blytheville—City let contract to Volz Construction Co., Baltimore Bldg., Memphis, Tenn., for \$61,000 sewer improvements; includes 37,000 ft. pipe, two pumping plants; sewage disposal plant. 3-26

D. C., Washington—District Commrs. let contract to Warren F. Brenizer & Co., 1501 S. Capitol St., for Monroe St. storm water sewer, between Clinton St. and R. I. Ave.

D. C., Washington—District Commrs. let following contracts. Bradbury Heights sanitary sewer, \$42,127, to J. B. McCrary Co., Atlanta; Randle Highlands sanitary sewer, 32 and G Sts., \$24,787, and Southern Ave. and 62 St. outlet sewer, \$4,026, to Roy D. Schlegel, 1734 Connecticut Ave., N. W., Plymouth St. surface sewer, Beach Drive, \$5,427; and Potomac Heights sanitary sewers, Macomb and Klinge Sts., \$3,806, to Peter D'Adamo Construction Co., Old Town Natl. Bank Bldg., Baltimore.

Fla., Lake City—Contractors estimating on water supply system for Veterans' Hospital, bids received June 16 by U. S. Veterans Bureau, L. H. Trippe, Ch. Constr. Div., Washington, are: Smith-Pew Construction Co., 435 Irwin St.; J. B. McCrary Engineering Corp., Citizens & Southern Bank Bldg., both Atlanta, Ga.; Permutit Co., 440 Fourth Ave., New York; Virginia Machinery and Well Co., Inc., First Natl. Bank Bldg., Newport News, Va.; Pittsburgh-Des Moines Steel Co., Neville Island, Pittsburgh, Pa.; H. B. Tranger Construction Co., Lakeland, Fla.; W. E. Caldwell Co., 200 E. Brandeis St., Louisville, Ky.; Mechanical Engineering & Construction Co., Mills Bldg., Washington, D. C.; Elgin Softener Corp., Elgin, Ill.; Rust Engineering Co., Martin Bldg., Birmingham, Ala.; Tippet & Wood, Phillipsburg, N. J.; R. D. Cole Manufacturing Co., Newman, Ga.; A. H. Gulon & Co., Gastonia, N. C.; Gates Construction Co., Box 344, Jacksonville, Fla.; Lakeside Engineering Corp., 176 W. Adams St., International Filter Co., 59 Van Buren St., both Chicago; Continental Contracting Co., Fort Dodge, Iowa; Samford Brothers, 301 Washington Ave., Montgomery; Chicago Bridge and Iron Co., 1616 Walnut St., Philadelphia; Murphey Pound, Box 422, Columbus, Ga.; B. K. Gunn & Co., Security Bldg., Miami, Fla.; The Refine Co., Omaha, Neb.; General Water Softeners, St. Paul, Minn.; Luitwieler Plumbing and Engineering Co., 123 Adams St., Rochester, N. Y.; Kilby Car & Foundry Co., Anniston, Ala.; Chattanooga Boiler & Tank Co., 1030 E. Main St., Chattanooga, Tenn.; C. M. Guest & Sons, Anderson, S. C.

Md., Baltimore—City, Bureau of Sewers, has low bid on substructure for screen house at Back River, Sanitary Cont. 275, from Morocco Contracting Co., 231 S. Exeter St.; \$54,380.

Md., Easton—Town, Ralph A. Townsend, Clk., opens bids June 17 for constructing about 1000 ft. terra cotta pipe storm drain, ranging from 15 to 20 in., together with manholes, catch basins and connections; E. G. Kastenhuber, Jr., Town Engr.

Md., Fort George G. Meade—See Roads, Streets and Paving.

Mo., St. Louis—Bd. of Public Service, W. W. Horner, Engr., let contract at \$11,786 for Letting 4245 to Hogan Contracting Co., 2914 Allen Ave.; sewers in Southwestern Sewer Dist. No. 6.

N. C., Durham—City Council authorized issuance of \$50,000 bonds for sewer construction.

Okla., Boise City—City voted \$55,000 bonds for sewage disposal plant; Chas. A. Haskins, Consol. Engr., 824 Finance Bldg., Kansas City, Mo.

Okla., Lawton—State Bd. of Affairs, W. C. Hughes, Chmn., Capitol Bldg., Oklahoma City, plans \$18,000 sewage disposal plant at Cameron School of Agriculture.

Tenn., Memphis—DeHart Machine and Foundry Co., 141 Third Ave., N., Nashville, awarded contract for sewer and street castings for 12 months.

Tex., Houston—City Council received low bid on storm sewers on Smith St., from Calhoun to Hawthorne, from Elder Construction Co., 4714 Jack St.; on sanitary sewers, from Charles K. Horton, Inc., 2202 Clay St.

Tex., Longview—See Water Works.

Telephone Systems

N. C., High Point—Piedmont Radio Co., capital \$100,000, incorporated; J. M. Wiggins, H. G. Wright.

Tex., Fort Worth—Southwestern Bell Telephone Co., 1010 Pine St., St. Louis, Mo., started erecting two central office buildings; 1 and 2 stories brick and rein. conc., comp. roof, tile and terrazzo floor, plaster walls; Eckert-Burton Construction Co., Contr., Burt Bldg., Dallas; I. R. Timlin Archt., 1010 Pine St.; W. J. Knight, Engr., Wainwright Bldg., both St. Louis.

Virginia—Bd. of Directors of Chesapeake & Potomac Telephone Co. of Virginia, 703 E. Grace St., Richmond, authorized \$74,950 im-

provements to system; construct additional long distance circuits between Charlottesville and Lynchburg; install additional telephone repeaters in Lynchburg and Hampton central offices; extend conduit and cable system at Hampton; construct additional long distance telephone circuits between Wise Junction and Virginia-Tennessee state line; install additional switchboard facilities at Fredericksburg and Winchester; also make underground conduit and cable extensions in Roanoke to involve \$33,760.

W. Va., Charleston—Chesapeake and Potomac Telephone Co. of West Virginia, Morrison Bldg., J. W. Latham, Ch. Engr., receives bids June 18 for telephone building; John W. Cowper Co., State Planters Bank Bldg., Richmond, Va., estimating; Meador & Handloser, Archts., Payne Bldg., Charleston; foundation, struc. steel and steel erection contracts noted let.

Textile Mills

Ga., Austell—A. K. Adams Co., 542 Plum St., N. W., Atlanta, has contract to construct filter plant for Clark Thread Co.; \$20,000; J. E. Sirrine & Co.

Md., Elk Mills—Elk Mills Fabrics Co., William Baldwin, Pres., rayon manufacturers, plans improvements, including power plant.

N. C., Asheville—Shur-Fit Knitters, capital \$100,000, incorporated; S. D. Harris, H. M. Robins.

N. C., Concord—Hartsell Mills erecting brick and steel addition; install 50 to 60 fine Index Jacquard looms.

N. C., Gastonia—Textiles, Incorporated Sales Co., capital \$500,000, organized; J. H. Separk, Pres., 209 W. Second Ave., selling unit of Textiles, Inc., A. G. Myers, Pres., Citizens Bank Bldg., \$17,000,000 organization recently formed by consolidation of number of Carolina textile plants.

N. C., Lowell—United Spinners, capital \$400,000, incorporated; S. N. Boyce, W. A. Julian, both Gastonia.

N. C., Lowell—Peerless Spinning Co., capital \$300,000, incorporated; S. N. Boyce, Gastonia; John M. Scott, 908 S. Tryon St., Charlotte.

S. C., Belmont—Piedmont Processing Co. chartered; B. E. Geer, Greenville, A. C. Lineberger, Belmont.

S. C., Greenville—Brooks Bros., Inc., under management of interests connected with Southern Pile Fabric Co., Highland Ave., erect tapestry plant; 90x160 ft.; employ 75 persons; Gallivan Construction Co., Contr., Gallivan Bldg.

Va., Blackstone—David Shapiro and Joseph Shapiro, partners of Blackstone Weaving Co., acquired plant of Klotz Silk Manufacturing Co.; Well Gotshal & Manges, Lincoln Bldg., New York, attorneys.

Water Works

Detail's of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that Classification.

Ark., Magnolia—Bd. of Trustees of A. & M. College, receives bids June 24 for 435-ft., 16-in. gravel wall well to produce 150 gal. per minute; 150 g. p. m., 250-ft. head centrifugal deep well pump and 20 h. p. motor; 25,000-gal. tank on 75-ft. tower.

D. C., Washington—Dist. Commrs. let contract for 20,000,000-gal. electric driven centrifugal pumping unit, Bryan St. pumping station, to Allis-Chalmers Manufacturing Co., Lexington Bldg., Baltimore, Md., and Milwaukee, Wis., at \$18,025.

Ga., Valdosta—City plans \$25,000 improvements to municipal water plant.

Ky., Louisville—Jones & Laughlin Steel Corp., Ross St., Pittsburgh, Pa., has contract for 1300 tons of steel for reservoir; Louisville Water Co.; John Chambers, Ch. Engr.

Ky., Louisville—Lock Joint Pipe Co., Ampere, N. J., reported, has contract for 4500 tons pipe.

Ky., Owensboro—Bd. of City Commrs. considering ordinance providing for water main and fire hydrants, Griffith Ave., from Parrish Court to Bosley Rd.

La., Springhill—City, W. H. Maloch, Mayor, let contract to W. H. O'Toole Construction Co., Monroe, for construction of water works; \$40,000; E. T. Archer & Co., Consol. Engrs., 609 New England Bldg., Kansas City, Mo.

La., West Monroe—City Council authorized advertising for 6,000 ft. 10-in. or 12-in. cast iron water pipe; use to connect with new well in Chappel; city voted \$75,000 water works bonds.

Md., Brunswick—City probably vote in August on \$100,000 bonds for water supply extension.

Md., Baltimore—Dept. of Public Works, Chief Engineer's Office, Municipal Bldg., has low bid of \$14,965 for two cone valves for Prettyboy Dam from Automatic Cone Valve Co., 30 Church St., New York.

Md., Cumberland—City, Ralph L. Rizer, City Engr., let contract at \$772,925 to Vang Construction Co., Liberty Trust Bldg., Cumberland, and Grant Bldg., Pittsburgh, Pa., for Evitts Creek Dam; J. E. Greiner Co., Consol. Engr., 1201 St. Paul St., Baltimore.

Md., Frederick—City, Elmer St. C. Maxwell, City Engr., let contract in connection with Linganore Creek water supply: To J. B. Ferguson Co., 35 W. Washington St., Hagerstown, at \$19,523, for 11,000 ft. pipe from filtration plant west to city; to Boyd & Goforth, Inc., Builders Bldg., Charlotte, N. C., at \$35,829 for construction of filtration and pumping plant; to American Water Softener Co., Fourth St. and Lehigh Ave., Philadelphia, Pa., at \$12,390, for filter equipment; to United States Pipe and Foundry Co., East Burlington, N. J., at \$35,970, for cast iron pipe; to Froehling & Robertson, Inc., 814 W. Cary St., Richmond, Va., for pipe and cement inspection; Frederick Iron & Steel Co. furnish pumps, motors and complementary equipment for filtration plant at \$2289.

Md., Fort George G. Meade—See Roads, Streets and Paving.

Md., Laurel—Commrs. of District of Columbia, Room 509 District Bldg., Washington, D. C., receives bids June 17 for pumping equipment and water distribution system at District Training School.

Md., Myersville—City, Frank O. Lowery, Burgess, construct storage reservoir; \$40,000 bonds authorized by legislature; J. B. McCrary Co., Engr., Citizens & Southern Bank Bldg., Atlanta, Ga.

Mo., St. Louis—McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., has contract for 450 tons 36-in. welded pipe.

Mo., St. Louis—Missouri Rolling Mill Corp., 6800 Manchester St., has contract for 1150 tons steel for reservoir covers at municipal water works.

Okla., Bramam—City, S. Orr, Mayor, plans additional water supply; \$15,000.

Okla., Blanchard—City, P. V. Kaker, Mayor, plans \$15,000 water extension; 15,800 ft. 2-in. to 6-in. cast iron mains.

Tenn., Chattanooga—City Water Co., A. F. Porzelius, Supt., plans \$25,000 improvements; include auxiliary pump, North Chattanooga, additional booster pump for Berkeley Hills, new roof for Citico engine plant.

Tenn., Nashville—Burford, Hall & Smith, Red Rock Bldg., Atlanta, Ga., have contract for \$130,000 pumping improvements; 1 De Laval 20 m. g. d. turbine-driven pumping unit with auxiliaries, low lift motor-driven pumping unit, piping, electric cables.

Tex., Camp Hulen, Palacios—U. S. Property and Disbursing Office, Camp Mabry, receives bids June 15 for water supply system.

Tex., Longview—City, B. N. Taylor, City Mgr., vote June 30 on \$30,000 water works and \$10,000 sewer bonds.

Tex., Randolph Field—Constructing Q. M., Capt. A. W. Parker, receives bids June 30 for sprinkler irrigation system.

Tex., Taylor—City asking bids on 150,000-gal. reservoir, including cooling system.

Tex., Thorndale—Municipal water works system, for which Kirkwood, Wharton & Lee, San Antonio, have contract, includes 25,000 ft. 8-in., 6-in. and 2-in. pipe. 25,000 yards earth levee construction to protect lake with core wall, motor-driven pump to lift water from lake to tank, and motor-driven fire pump; \$40,000; Joe Rody, Engr., Waco.

W. Va., Bluefield—City started work on filtration plant on Bluestone; under supervision of J. B. McCrary Co., Citizens & Southern Bank Bldg., Atlanta, Ga.

W. Va., Martinsburg—City probably vote July 21 on \$100,000 water bonds; about \$50,000 for improvements. Charles Weber, City Engr.; G. W. F. Mulliss, member, Water Comsn.

Woodworking Plants

Ark., Camden—Hardwood Industries, Inc., capital \$10,000, incorporated; A. R. Krause, 1414 Olive St., Pine Bluff.

Ark., Little Rock—J. E. Finney, 622 Bella St., Fort Smith, establish body factory, build school buses.

La., New Iberia—Mancusco Cooperage Co., Kenner, let contract to Benz, Inc., agents for Harry Bros. Co. of La., 3505 S. Carrollton Ave., New Orleans, to construct 1-story, 70x150-ft., frame and metal cooperage factory and warehouse; Theo. L. Ferrier, Archt., Maritime Bldg., New Orleans. 6-4

N. C., Liberty—Liberty Veneer Co., rebuild plant recently burned at \$45,000 loss; Cyrus Shoffner, Sec.-Treas.

N. C., Liberty—B. J. Gregson, Inc., chair manufacturer, advises plant not burned. 6-4

N. C., Thomasville—American Hardware Co., H. R. Kyser, local attorney, purchased Southern Veneer Co. plant.

Tex., Port Arthur—Port Arthur Planing Mill Co., Lakeshore Dr. and Canal St.; erect plant 16th and Fort Worth Sts.; 100x100 ft., ultimately expand to 100x200 ft.

FIRE DAMAGE

Ark., El Dorado—Bradford Bryan Bldg.; loss \$50,000.

Ark., Fort Smith—Plant of Radiant Glass Co., George D. Carney, Sec.-Mgr.; loss \$20,000.

Ark., Hot Springs National Park—Dr. T. Calaway's offices, 723½ Central Ave., W. M. Housley Co.'s dry goods store, 728 Central and Outlet Dry Goods Store, all in bldg. owned by C. J. Spencer, 801 Central Ave., and Mrs. Louise Horner Shields; loss \$20,000.

Fla., Pensacola—Portion of plant of Weis Patterson Lumber Co.; loss \$125,000.

Fla., Williston—Plant of Williston Ice and Cold Storage Co.; R. L. Waff, Mgr.

Ga., Midville—Drew & Co. warehouse, loss \$2000; ginning plant, office, bagging house and 2 seed houses of W. B. Drew, loss \$25,000.

Ky., Central City—Broadway Garage, owned by Mayor C. W. Wells and Neal Barnes; loss \$40,000.

La., Abbeville—Frank DeGraw's theater; Western Union Bldg.; Landry Stansbury's pool room; loss \$25,000.

La., Franklin—Feed Warehouse and mill of Sterling Sugars, Inc.

Miss., Meadville—Woodrow Wilson Consolidated School, 6 miles from Meadville.

Mo., St. Joseph—Grand Stadium, Western League Baseball Park; loss \$20,000.

Okla., Picher—Sludge mill at Eastern mine, owned by Eleventh Hour Mining Co., Joplin, Mo.

Okla., Oklahoma City—G. A. Nichols, 115 N. Harvey St., lumber yard and Dunn Fuel and Lumber Co., 220 N. Broadway; loss \$100,000.

Okla., Yukon—Yard of Ketcham Lumber Co.; loss \$25,000.

S. C., Georgetown—Residence on Windsor Plantation, Black River, owned by Paul D. Mills, 405 Park Ave., New York.

Tex., Harlingen—Stuart Place citrus packing plant of Harper and Fitzgerald; loss \$25,000.

Tex., Houston—Wooden hangar owned by Houston Corp.

Tex., Sherman—Knox G. Winebrenner's residence; loss \$10,000.

Va., Branchville—W. H. Sykes' warehouse; Branchville Grocery Store, owned by Mrs. De Loatche; W. R. Sykes' store; Harris & Darden's store; loss \$15,000.

Va., Norfolk—Plant of American Peanut Corp., loss \$1,000,000; Old Dominion piers, municipally owned and leased to Buxton Line; Union Mission, etc.

Va., Shawsville—John L. Vaughan's residence; loss about \$25,000.

W. Va., Weston—New residence at Price-town, 2 miles from Weston, of G. F. Frye, Weston.

Ga., Albany—City Comsn. appropriated \$3000, to be added to \$7000 donated for improvements to library.

La., New Orleans—City Comsn. Council has low bid at \$83,907 from Reimann Construction Co., Maritime Bldg., for repairs and alterations to Dryades St. Market; cast stone, hardwood, terrazzo and tile floors, marble, metal doors, flat built-up roof, steel sash and trim, hollow and interior tile, ventilators, brass and bronze work; Sam Stone, Jr., & Co., Archts., Masonic Temple Bldg. 5-28

La., New Orleans—City receives bids June 23 at office City Purchasing Agt., Room 24, City Hall, for Zengel, Ewing and Suburban markets; \$30,000 each; two 45x120 ft. and one 40x100 ft., brick, 1 story; Sam Stone, Jr., & Co., Archts., Masonic Temple Bldg. 5-21

Mo., Kansas City—Civic Improvement Comm., (advisory comm. appointed by City Council) Howard S. Thompson, Publicity Dept., Assembly Room, Chamber of Commerce, plans to have work started at once on \$4,500,000 municipal auditorium for which bonds were recently voted; also plans to start work soon, probably within 6 weeks, on other projects. 6-4

Okla., Asher—City, H. T. Hopkins, Clk., erect brick and frame city hall; 1 story; J. B. White, Archt., Ardmore; bids in.

Okla., Stigler—Haskell County Bd. of Commrs., D. A. McDaniel, County Clk., call for bids about July 1 for \$75,000 court house; brick, stone and rein. conc.; Haralson & Nelson, Archts., Merchants Bank Bldg., Fort Smith, Ark., drawing plans.

Okla., Tulsa—City, Earl Logan, Auditor, has low bid from R. K. Hughes, Kennedy Bldg., for branch libraries Greenwood, North Side, West Tulsa and East Side; Donald McCormick, Archt., 526 Exchange Place. 4-16

Tenn., Huntington—Carroll County, Dwayne D. Maddox, Sec., Court House Bldg. Comm., opens bids June 16 for court house; Doric type, stone, 100x100 ft., with main section 97x63 ft.; Hart, Freeland & Roberts, Archts., Ind. Life Bldg., Nashville. 5-7

Tex., Fort Worth—City Council, O. E. Carr, City Mgr., may vote July 21 on about \$250,000 bonds for jail; brick, stone, rein. conc., 4 stories and basement, comp. and tile roof, conc., terrazzo and tile floors, plaster walls; Wyatt C. Hedrick, Inc., Archt., 1005 First Natl. Bk. Bldg.

Tex., Luling—City, Henry G. Stein, Mayor, opens bids June 15 for city hall and fire station; conc. frame, face brick, struct. clay tile, 45x70 ft., 1 and 2 stories, fireproof, terrazzo floors, tile roof, cast stone trim; Glenn C. Wilson and Richard J. Werner, Archts., Milam Bldg., San Antonio. 6-4

Dwellings

D. C., Washington—D. J. Dunigan, Inc., Tower Bldg., has permit for 9 brick dwellings, 5501-17 Fourth St., N. W.; 2 stories; total \$50,000.

D. C., Washington—Chas. Sturbitts, 3900 McKinley St., has permit for \$10,000 residence, 5501 Thirty-third St., N. W.; brick, 2 stories.

D. C., Washington—P. J. Grady, Investment Bldg., has permit for 2 frame dwellings, 4912-16 49th St., N. W.; 2 stories; total \$12,000.

D. C., Washington—Dr. Charles L. Billiard has permit for \$15,000 residence, 3015 Elliott St., N. W.; brick, 2½ stories.

D. C., Washington—Randolph L. Jennings, 726 14th St., N. W., has permit for \$24,000 residence, 1717 Poplar Lane, N. W.; brick and stone, 2 stories.

D. C., Washington—Stewart Bros., Inc., have permit for 3 brick dwellings, 1841-45 Bay St., S. E.; 2 stories, \$4000 each.

D. C., Washington—Col. J. M. Wright erect brick and stone trim residence, Kalorama Circle, N. W.; 2½ stories, slate roof, tile, terrazzo, hardwood and rubber floors, vapor heat, oil or gas burner; Wyeth & Sullivan, Archts., 16 Jackson Place, N. W.; plans ready in few weeks.

D. C., Washington—Mr. Mullin, care Claughton West, Archt., 5318 14th St., erect brick and stone residence, Edgemoor, Md.; 2½ stories, hardwood floors, tile bath, slate and tin roof; hollow tile, hot water heat; bids in.

Fla., Little River, Miami—St. Marys R. C. Church, Father Roach, Pastor, receives bids June 15 for rectory; V. H. Nellenbogen, Archt., 925 Lincoln Rd., Miami Beach; following invited to estimate: J. C. Gaffney Co., 933 Lincoln Rd.; O'Neill-Orr Construction Co., Fifth St.; L. A. Wessel, 305 23rd St., all Miami Beach; J. Y. Gooch & Co., Bedford Bldg., N. E. First St.; Gunn & Goll.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

D. C., Washington—National Society of Colonial Dames of America, 27175 Q St., N. W., has permit for interior alterations; \$10,000.

La., Monroe—Woodmen of the World, U. W. Pickens, Pres. of Bd., Columbia Rd., ready for bids within 10 days for alterations and additions to bldg., Jackson St.; stucco exterior; 4 stories and restaurant on first floor; J. W. Smith & Associates, Archts., Ouachita Natl. Bk. Bldg. 3-26

Tex., Fort Worth—Masonic Home and School, Mansfield Rd., Thos. Fletcher, erect printing shop; 1 story, brick; \$30,000, including equipment; W. G. Clarkson & Co., Archts., 610 First Natl. Bank Bldg.; sketches.

Bank and Office

Ala., Birmingham—Liberty National Life Insurance Co., 517 N. 22nd St., Robt. P. Davison, Pres., purchased bldg.; will not erect structure for which Chas. H. McCauley, Jackson Bldg., was drawing plans for \$75,000 first unit; make minor repairs. 4-23

Ga., Atlanta—Fulton National Bank, Fulton National Bank Bldg., Ryburn Clay, Pres., reported plans branch bank, Peachtree Rd., Buckhead; brick and tile, stone trim, 2 stories, conc. foundation, comp. roof; Pringle & Smith, Archts., Norris Bldg.

N. C., Durham—Durham Medical Corp. have plans ready about July 1 for \$250,000 fireproof Medical Arts Bldg., W. Chapel Hill and Duke Sts.; 5 stories and basement, 90x100 ft., built-up roof, cast stone, electric refrigerators, elevators, hardwood, linoleum, terrazzo, tile flooring, incinerator, limestone, mail chutes, marble, metal ceilings, metal doors, steel sash and trim, gypsum and hollow tile, ventilators, wire glass, brass and bronze work; Milburn-Heister Co., Archt., Hill Bldg., Washington, D. C., and Durham; C. W. Barber, Engr., care Archt. 6-4

Tex., Corpus Christi—Central Power & Light Co., 110 N. Chapparral St., Geo. W. Gilliam, Mgr., plans to start work within 60

days on 2-story office bldg., Chaparral and Luguna Sts.; fireproof, 40x90 ft.; foundation for additional stories; terrazzo floors, 8-ft. American walnut wainscoting on first floor; erect cottage upon completion of office bldg.; cottage to contain auditorium to seat 150; John M. Marriott, Archt., Frost National Bank Bldg., San Antonio.

Tex., Longview—T. L. James, Ruston, La., plans \$225,000 7-story office bldg. provided local support is given; would personally provide \$25,000, issue 7% preferred stock to \$100,000, and \$100,000 in bonds.

Churches

Md., Baltimore—Holy Comforter Lutheran Church, Rev. Wm. A. Wade, Pastor, 505 Harwood Ave., opens bids June 16 for basement for bldg., Harwood and York Rd.; Richter & Eiler, Archts., Reading, Pa.; following contractors estimating: C. W. Littleton, 4313 Liberty Heights Ave.; M. A. Long Co., 10 W. Chase St.; Avon Construction Co., 216 E. Lexington St., all Baltimore; W. A. Sands, Towson, Md.

Okla., Norman—Church of The Nazarene, Rev. Milton Smith, Pastor, erect \$20,000 church; brick, 1 story; Langbein & Johnston, Archts., Oklahoma City; plans ready about June 10.

S. C., Spartanburg—Central Christian Church plans bungalow, N. Church St.; to be used for Sunday school.

Tex., Graham—First Baptist Church, Rev. J. D. Thorn, Pastor, has plans about complete for Sunday school; auditorium later; brick and stone, fireproof, 2 stories and basement, 52x80 ft.; Withers & Thompson, Archts., 201 Holmes Bldg., Fort Worth.

City and County

Ala., Anniston—Calhoun County Bd. of Revenue has low bid at \$116,057 from J. P. Bradfield, Hill Bldg., Columbus, Ga., for court house remodeling; Lockwood & Poundstone, Archts., 101 Marietta Bldg., Atlanta, Ga.; M. R. Thomas, Asso. Archt., 1018 W. 15th St., Anniston. 5-28

Inc., 69 N. E. 36th St.; J. W. Hunt, 1130 S. W. 13th Ave.; Halsema Bros., 1400 N. Miami Ave.; St. John Construction Co., 629 N. W. Seventh St., all Miami. 5-21

Fla., Miami Beach—W. J. Gano, 4751 N. Bay Rd., considers erecting residence.

Fla., Miami Beach—Miss Sally Milgrim, 6 W 57th St., New York, and care Milgrim, Inc., 738 Lincoln Rd., erect residence, Prairie Ave., near 30th St.

Ga., Atlanta—DeLoach & Marbut, 583 Flatshoals Ave., S. E., erect brick veneer residence, 1113 Glenwood Ave., S. E.; 1 story, hardwood floors, 6 rooms and bath, comp. roof, hot air heat; owner builds.

Ga., Augusta—M. C. Harper has low bid at \$14,148 from Fred Williams, 1006 Russell St., for 2 duplexes; F. Arthur Hazard, Archt., 2056 McDowell St. 5-21

La., New Orleans—Mrs. Harry T. Howard, 3513 St. Charles Ave., receives bids June 10 at office Armstrong & Koch, Audubon Bldg., for brick and hollow tile residence, site present structure; 2 stories, slate roof, 3 baths.

La., New Orleans—Mrs. E. Gerner ready for bids in about 10 days for single raised residence, Cleveland Ave. near Cortez St.; rein. conc. foundation, slate roof, built-in features; Theo. L. Perrier, Archt., Maritime Bldg.

Md., Baltimore—E. J. McGraw, 2306 Mt. Royal Terrace, erect stone and frame residence, 321 Tumbridge Rd., Homeland.

Md., Baltimore—Bowley's Quarters Co., Wm. H. Gisin, Agt., 100 E. Pleasant St., erect 6 bungalows, Blackberry Point, Seneca River.

Md., Baltimore—J. M. Wagner, 1806 E. 28th St., erect stone and stucco residence, Norman Ave.; 2½ stories, slate roof, hot water heat; F. E. Beall, Archt., 334 St. Paul St.; bids in.

Mo., St. Louis—Mrs. D. E. Louree purchased site, Clayton and Hanley Sts., Lake Forest; having plans drawn by Dan H. Mullen, Jr., 17 N. Meramec, for residence.

Mo., St. Louis—Paul E. Kummer, care Walter P. Manske & Associates, Archts., 4064 Olive St., has low bid from Ewald Schroeder, 4642 Natural Bridge Rd., for residence, Bel Nor. 5-28

Mo., St. Louis—D. C. Brown, Jr., care Beverly T. Nelson, Archt., 403 Chemical Bldg., erect brick and frame residence, Fair Oaks; 2 stories and basement, 63x45 ft.

Mo., University City, St. Louis—Dr. Christy W. Pieper, 5828 Cabanne Ave., erect brick residence, 7918 Gannon Ave.; 2 stories and basement, 37x25 ft., tile bath, hardwood floors, slate roof, tile wainscoting, hot water heat; John Warren Teasdale, Archt., 1005 First Natl. Life Bldg.; bids in.

N. C., Charlotte—Frank Daniels, Raleigh, erect residence; bids in.

N. C., Durham—Prof. J. B. Hubbel, 204 Faculty Apts., erect \$10,000 residence.

Okl., Miami—Geo. Coleman erect \$18,000 brick residence, 50x85 ft., 1 story and part basement; Baldwin & Baldwin, Archts., Magnolia Bldg., Oklahoma City; plans about ready.

Tex., Houston—E. B. Arnold, Medical Arts Bldg., has permit for \$16,900 residence, 3404 Del Monte St.; brick veneer, 12 rooms.

Tex., Houston—C. S. Settegast, 414 Fannin St., has broken ground for \$15,000 residence, 3208 Huntington Place, River Oaks; Cameron Fairchild, Public National Bank Bldg., and Eugene Werlin, Archts. 6-4

Tenn., Memphis—M. S. Mascari, 424 Linden Ave., erect brick veneer residence, Jackson Ave. and Idlewild St.; 1½ stories, 52x73 ft., comp. or tile roof, tile bath, hardwood floors; Regan & Weller, Archts., Bank of Commerce Bldg.; drawing plans.

Va., Richmond—L. A. Bowen, 1300 Hull St., erect residence; Courtney S. Welton, Archt., Grace American Bank Bldg.; bids in.

Va., Roanoke—Geo. S. Shackelford, Jr., Colonial National Bank Bldg., erecting \$20,000 residence, Lafayette Ave., South Roanoke.

Government and State

Ark., Fort Smith—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably call for bids before July 15 for Federal building.

Ark., Little Rock—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., expects to have plans for \$1,435,000 Federal bldg. complete and ready for bids before July 15. 5-28

D. C., Washington—Prospective estimators on barracks and boiler plants, Naval Air Station, Anacostia, bids June 17 by Chief, Navy Dept., Bureau of Yards and Docks: Graham Contracting Co., 1052 Washington Bldg.; Adams Construction Co., Woodward Bldg.; A. L. Smith & Co., 2539 Pennsylvania Ave.; Geo. E. Wyne, 2539 Pennsylvania; Mechanical Engineering & Construction Co., Mills Bldg.; Rust Engineering Co., 1406 G St., all Washington; J. E. Coleman, Clarendon, Va.; Worsham Bros., Medical Arts Bldg., Knoxville, Tenn.; W. P. Rose, Wayne Natl. Bk. Bldg., Goldsboro, N. C.; Virginia Engineering Co., Newport News, Va.; Newport Contracting & Engineering Co., Lee Hall, Va.; Continental Contracting Co., 309 Second Ave., South, Fort Dodge, Iowa; Ralph S. Herzog, 10 S. 18th St., Philadelphia, Pa.; Benj. F. Shaw Co. P. O. Box 953, Wilmington, Del.; Hartenstine-Zane Co., 225 Broadway, New York. 6-4

Fla., Key West—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids in duplicate June 26 for post office, court house, custom house, etc.; \$25,000; drawings from office Supvg. Archt. 5-28

Ga., Americus—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., erect \$100,000 post office; rein. conc. struct. steel, brick, and tile, stone trim, 2 stories, comp. roof.

Ky., Ashland—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site for post office.

La., Opelousas—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$73,850 from O. M. Gwin Construction Co., 3501 Fern St., New Orleans, for post office remodeling and extension. 5-28

La., New Orleans—Department of Justice, Sanford Bates, Director, Bureau of Prisons, Washington, D. C., probably call for bids soon to convert old Mint Bldg. for Federal prison; accommodate 300, \$100,000; new partitions, steam heat, new wiring, plastering, carpentry, sheet metal work, cement paving, steel windows, waterproofing, etc.; Diboll & Owen, Ltd., Archts., Canal Bk. Bldg. 1-29

La., Shreveport—Additional prospective estimators on \$350,000 post office remodeling and extension, bids June 17 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.: Gen. Constr.—Schuler & McDonald, 1723 Webster St., Oakland, Calif.; S. & W. Construction Co., Shrine Bldg., Memphis, Tenn.; Grahn Construction Co., Red Rock Bldg., Atlanta, Ga.; Worsham Bros., Empire Bldg., Knoxville, Tenn.; Murch Bros. Construction Co., Railway Exchange Bldg.; Hiram Lloyd Building & Construction Co., Syndicate Trust Bldg., both St. Louis, Mo.; Kellogg & Anderson, Sedalia, Mo.; J. B. Beard Corp., Shreveport, La.; Theriault Contracting Co., 534 E. Johnson St., Philadelphia, Pa.; H. W. Underhill Construction Co., 235 N. Waco Ave., Wichita, Kan.; R. F. Ball Construction Co., Electric Bldg., Fort Worth, Tex.; John Largura & Co., 3672 Adams St., Gary, Ind.; Christy-Dolph Construction Co., Construction Industries Bldg.; A. J. Rife Construction Co., 1913 N. Harvard St., both Dallas, Tex.; Elevators—Warsaw Elevator Co., 227 Fulton St., New York; A. B. See Elevator Co., Inc., 1343 H St., N. W.; Houghton Elevator & Machine Co., Vermont Bldg.; Otis Elevator Co., 810 18th St., N. W., all Washington; Atlantic Elevator Co., Erie Ave. and D St.; Westinghouse Electric Elevator Co., 30th and Walnut Sts., both Philadelphia, Pa.; General Manufacturing Co., Box 510, Raleigh, N. C.; Electric Co., Schenectady, N. Y.; Jeffery American Elevator & Machine Co., 500 E. Main St., Louisville, Ky. 6-4

Md., Chestertown—Maryland National Guard, Adjt.-Gen. Milton A. Reckord, Armory Place and Howard St., Baltimore, have plans completed in several days for brick and stone trim armory and soon take bids; 1 story, about \$50,000; Wm. Gordon Beecher, Archt., 12 E. Pleasant St. 5-14

Md., Fort George G. Meade—Constructing Quartermaster receives bids until June 17 for 1 brick hospital, ambulance garage and ramp with slate roof; about 40x24 ft.; plans from above.

Miss., Lumberton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$48,725 from Algernon Blair, First Natl. Bank Bldg., Montgomery, Ala., for post office; rein. conc., brick, tile, stone, 2 stories and basement, 64x56 ft., comp. and slate roof, steel work. 5-28

Miss., Unionville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids July 1 for post office, etc.; drawings from office Supvg. Archt.

Mo., Kansas City—State Highway Comsn., State Highway Bldg., Jefferson City, T. H.

Cutler, Ch. Engr., has low bid at \$72,000 from M. E. Gillioz, Monett, for office and garage building. 5-14

Mo. Lamar—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids July 1 for \$70,000 post office, etc.; drawings from office Supvg. Archt. 5-21

N. C., Fort Bragg—Constructing Quartermaster has low bid from W. P. Rose Co., Wayne Natl. Bank Bldg., Goldsboro, N. C., for hospital and utilities; \$475,000 available; structure rein. conc., brick, tile and stucco, 3 stories and basement, 260x40 ft., and 36x100 ft., tile roofs, limestone, granite, terra cotta, marble, tile and soapstone, linoleum, asphalt and terrazzo floors. 5-28

Okla., Mangum—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected site or post office.

Tenn., Knoxville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., selected Baumann & Baumann, 815 Market St., Knoxville, as architects for \$1,575,000 post office, Main, Walnut, Cumberland and Locust Aves. 4-30

Tenn., Lookout Mountain—Constructing Quartermaster, James Bldg., Chattanooga, soon receive bids for caretaker's quarters and comfort station, Point Lookout; \$13,000.

Tex., Atlanta—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids July 1 for post office, etc.; drawings from office Supvg. Archt.

Tex., El Paso—Prospective estimators on Federal house of detention, bids June 24 by Dept. of Justice, Sanford Bates, Director, Bureau of Prisons, Washington, D. C.: J. S. Harrison Construction Co., 514 Liberty Natl. Bank Bldg., Waco, Tex.; Moore Iron Works, Inc., 1630 Myrtle Ave.; Jos. E. Morgan, 319 Texas St.; Robt. E. McKee, 1916 Texas St.; Anderson Bros., 500 N. Cotton Ave.; H. T. Ponsford & Sons, 914 E. Missouri St., all El Paso; Otis Elevator Co., 810 18th St., N. W., Washington; Bellows-Maclay Construction Co., Construction Bldg., Dallas, Tex.; Kellogg & Anderson, Sedalia, Mo.; Wm. A. Pope, 26 N. Jefferson St., Chicago, Ill.; Drake-Avery Co., 210 State St., Detroit, Mich.; Geo. A. Fuller Co., Fuller Bldg.; James Stewart & Co., 17 E. 42nd St.; Twiner Construction Co., 244 Madison Ave.; Bolaban-Gordon Co., 116 W. 39th St., all New York; Otto Blefield Co., Watertown, Wis.; Pauly Jail Building Co., 2219 DeKalb St., St. Louis, Mo.; Van Dorn Iron Works Co., 79th and Nickel Plate R. R., Cleveland, O.; Southern Steel Co.; Southern Prison Co., both 4500 S. Pecos St., San Antonio, Tex.; Stewart Iron Works Co., 17th St. & Machson Ave., Cincinnati, O.; St. Paul Foundry Co., St. Paul, Minn.; E. H. Eads & Co., Chickasha, Okla.; R. H. Goodrich Co., 1144 E. Georgia St., Indianapolis, Ind.; Fries & Son Steel Construction & Engineering Co., Second and Madison Sts., Covington, Ky.; Roanoke Iron & Bridge Works, Inc., Walnut Ave., S. E., Roanoke, Va.; Nelson, Chase & Gilbert Construction Co., Waverly, O.; Las Cruces Lumber Co., Las Cruces, N. Mex. 6-4

Tex., Fort Worth—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids in duplicate July 2 for constr. (except elevators, dumbwaiter and lighting fixtures) of post office; \$1,245,000; Wyatt C. Hedrick, Inc., Archt., First Natl. Bank Bldg., Fort Worth; drawings from office Supvg. Archt. 2-26

Tex., Fort Worth—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., will locate \$3,000,000 to \$3,500,000 Federal Narcotic Farm in Tarrant County, about 6½ miles from Fort Worth; principal structures are administration bldgs., \$520,000; \$1,000,000 prolonged treatment bldg.; dining hall and assembly bldg., \$930,000; covered arcades, \$60,000; \$85,000 kitchen; \$75,000 laundry and shops; \$30,000 power house and stack.

Tex., Houston—Additional prospective estimators on post office and court house extension and remodeling, bids June 16 by Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C.: Gen. Constr.—DeVault & Deitrick, Inc., Massillon Rd., Canton, O.; Ring Construction Co., Minneapolis, Minn.; Noyes, Roach & Co., Morris Bldg., Joliet, Ill.; Nathan Wohlfeld, Construction Bldg., Dallas, Tex.; Schuler & McDonald, 1723 Webster St., Oakland, Calif.; Robt. E. McKee, 1900 Texas St., El Paso, Tex.; Northern Construction Co., Esperson Bldg., Houston, Tex.; Elevators—Shepard Elevator Co., 2413 Colerain Ave., Cincinnati, O.; Moffatt Machinery Manufacturing Co., N. Third St., Charlotte, N. C.; Kimball Bros. Co., Ninth St. and 11th Ave., Council Bluffs, Iowa. 6-4

Va., Martinsville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., remodel and enlarge post office.

Va., Quantico—Navy Dept., Bureau of Yards and Docks, Washington, D. C., opens bids June 24 for enclosing porches, Marine Barracks; work includes wood sash, doors, paneling and flooring, stud walls, plastering, brick work, heating work.

Virginia—Treasury Dept., U. S. Coast Guard, Washington, D. C., opens bids in triplicate June 23 for frame dwelling (2 stories, 30x45 ft., cone. foundation, elect. lights, water supply, heating, plumbing and sanitary systems), pile bent footbridge 6 ft. wide and about 800 ft. long, steel sheet pile enclosure forming 75x75-ft. anchorage, with excavations, filling and grading work, for Hog Island Coast Guard Station, south end Hog Island; specifications, etc., from Field Asst. M. P. Hite, C. & R., U. S. Coast Guard, Elizabeth City, N. C., Commander, Sixth Dist., U. S. Coast Guard, Lewes, Del., or Commandant, U. S. Coast Guard, Washington, D. C., B. M. Chiswell, Capt., U. S. Coast Guard, Act. Commandant.

Hospitals, Sanitariums, Etc.

Ga., Savannah—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$12,300 from John M. Geary Co., Arcade Bldg., Asheville, N. C., to remodel and enlarge Marine Hospital. 6-4

N. C., Charlotte—Mecklenburg County Tuberculosis Sanatorium Bd. of Managers, H. W. Harkey, Chmn., New Sharon Rd., considers erecting addition for negro patients.

Okl., Norman—State Bd. of Public Affairs, Oklahoma City, erect \$250,000 hospital; brick, rein. conc. and stone, 2 stories and basement; Layton, Hicks & Forsyth, Archts., Braniff Bldg., Oklahoma City.

Tex., Waco—Moffatt Machinery Co., 510 W. Third St., Charlotte, N. C., has contract at \$13,887 for elevators for \$1,500,000 U. S. Veterans Hospital; Henry B. Ryan Co., Contr., 500 N. Dearborn St., Chicago, Ill. 5-21

Va., Richmond—Department of Public Welfare, Dr. W. Brownley Foster, Director, having plans drawn by Carneal, Johnston & Wright, Electric Bldg., for \$80,000 tuberculosis pavilion, Pine Camp Sanatorium; 50 beds. 6-4

W. Va., Huntington—Prospective estimators on bldgs. and utilities for \$700,000 U. S. Veterans Hospital, bids in triplicate June 23 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.; Robt. H. Evans & Co., 395 E. Broad St., Columbus, O.; Wise Granite & Construction Co., American National Bank Bldg., Richmond, Va.; W. L. Mulroy Building Corp., Flat Iron Bldg., Peekskill, N. Y.; Green & Stowe, Welch, W. Va.; Bracker Construction Co., Bldrs. Exchange, Minneapolis, Minn.; W. J. Paul, 2005 N. Maple Ave., Zanesville, O.; M. H. Sobel Co., First Natl. Bk. Bldg., Detroit, Mich.; Batson-Cook Co., Inc., West Point, Ga.; Cross & Co., Norris Bldg., Joliet, Ill.; C. A. Moses Worsham Bros., Empire Bldg., Knoxville, Tenn.; Henry B. Ryan Co., 500 N. Dearborn St., Chicago, Ill.; R. S. Mankin & Co., Robson-Prichard Bldg., Huntington, W. Va.; Murch Bros. Construction Co., Ry. Exch. Bldg., St. Louis, Mo.; General Construction Co., Box 9037, Huntington; James I. Barnes, Springfield, O.; C. W. Hancock & Sons, Inc., 1010 Robson-Prichard Bldg., Huntington; Schuler & McDonald, 1750 Army St., San Francisco, Calif.; Algernon Blair, First Natl. Bk. Bldg., Montgomery, Ala.; W. J. Schirmer Co., 1720 Euclid Ave., Cleveland, O.; Carl W. Shink, 711 Hawley Bldg., Wheeling, W. Va.; Adams Construction Co., Woodward Bldg., Washington; Ward & Ward, Capital City Bk., Charleston, W. Va.; Fred Green, Lejeune Rd., Palmyra, N. Y.; Virginia Engineering Co., First Natl. Bk. Bldg., Newport News, Va.; H. W. Cox, Blackstone Bldg., Ashland, Ky.; National Construction Co., Tower Bldg., Washington; Noyes, Roach & Co., Norris Bldg., Poliet, Ill.; C. A. Moses Construction Co., 176 W. Adams St., Chicago; Harrison-Wright Co., Box 928, Charlotte, N. C.; H. W. Cox, Blackstone Bldg., Ashland, Ky.; Ward & Ward, Capital City National Bk., Charleston, W. Va.; Heaphy & Little, Inc., 690 Eighth Ave., New York; Foundation Waterproofing Co., 53 W. Jackson Bldg., Chicago; Hill Co., Inc., Oak Hill, W. Va.; Ralph S. Herzog, Fuller Bldg., Philadelphia, Pa.; Boone, Eason & Wood, L. C. Bldg., Bluefield, W. Va.; Midland Building Co., 2513 Burnett St., Cincinnati, O.; A. W. Kutsche & Co., 2111 Woodward Ave., Detroit, Mich.; other estimators are: W. E. Caldwell Co., 200 E. Brandeis St., Louisville, Ky.; Pittsburgh-Des Moines Steel Co., Neville Island P. O., Pittsburgh, Pa.; Continental Chimney Co., Inc., 127 N. Dearborn St., Chicago; Alphonse Custodis Chimney Corp., Fourth Ave., New York; Singer-Kennedy Corp., 203 S. Dearborn St.; General Concrete Construction Co., 431 S. Dearborn St., both Chicago; Carbondale N. Y. Co., Inc., 175 Christopher St., New York; C. P. Wood Co., 951 Blair St., Cincinnati; Frick

Co., Inc., Shoreham Bldg., Washington; York Ice Machinery Co., 1238 N. 44th St., Philadelphia; Bryce Plumbing & Heating Co., Florence, S. C.; W. M. Johnson, 630 Eighth Ave., Huntington; G. L. Hawes, Box 1183, Huntington; Rosenblatt & Hunt, Box 828, Charleston, W. Va.; Ray L. Phelps, Beloit, Wis.; Levene Electric Co., 326 North Ave., New Rochelle, N. Y.; Keystone Engineer Co., 335 Walnut St., Reading, Pa.; Young Electrical Works, 857 Reynolds St., Augusta, Ga.; B. Grunwald, Inc., 1110 Farnam St., Omaha; Chas. E. Mumford, 8 Locust Ave., Fairmont, W. Va.; Jas. Reid, 41 W. 26th St., Bayonne, N. J.; Mason & Dullion, 3024 Third Ave., South Birmingham, Ala.; Meyers Bros., 219 Hale St., Charleston, W. Va.; Kissel Bros., Inc., Hartford, Wis.; G. C. Wilcoxen Co., Inc., 500 W. Short St., Lexington, Ky.; C. A. Hooper Co., 453 W. Gilman St., Madison, Wis.; Redmon Heating Co., 124 N. Fourth St., Louisville, Ky.; J. L. Powers, 227 E. Main St., Bennettsville, S. C.; West Virginia Heating & Plumbing Co., Hale St., Charleston; Katz & Lewis Plumbing Co., 2205 W. Roosevelt Rd., Chicago; Moffatt Machinery Co., 510 W. Third St., Charlotte, N. C.; Gurney Elevator Co., 401 N. Broad St., Philadelphia, Pa.; Otis Elevator Co., 775 Main St., Buffalo, N. Y.; Electro Construction Co., Tower Bldg., Standard Engineering Co., 2129 I St., N. W.; Loftis-Seely Plumbing & Heating Co., 1420 Constitution Ave.; Keystone Heating & Equipment Co., 1230 Shoreham Bldg., all Washington; H. E. Crook Co., Inc., 28 Light St., Baltimore, Md.; Westbrook Elevator Manufacturing Co., Danville, Va.; Warner Elevator Mfg. Co., 2613-31 Spring Grove Ave., Cincinnati, O.; Shepard Elevator Co., 2413 Colerain Ave., Cincinnati, O.; Kerscher Elevator Co., 918 Michigan St., Toledo, O.; Vilter Manufacturing Co., Milwaukee, Wis.; Chicago Bridge & Iron Works, 1616 Walnut St., Philadelphia; Blumenthal-Kahn Electric Co., 518 N. Charles St.; Riggs, Distler & Co., 216 N. Calvert St., both Baltimore; Capital Life & Manufacturing Co., 424 Town St., Columbus, O.; General Elevator Co., 1200 15th St., Washington; Warsaw Elevator Co., Mercer and Grant Sts., Baltimore; Frank P. Boyd, 1019 Lafayette Ave., Columbus, Ind.; Heaphy & Little, Inc., 690 Eighth Ave., New York; O'Connell Electric Co., 63 Mt. Hope Ave., Rochester, N. Y.; J. Howard Chrislip, 1 N. Main St., Yilippi, W. Va.; F. A. Clegg & Co., 110 S. First St., Louisville, Ky.; J. Guy Hawkins, 1105 Field St., Fairmount, W. Va.; H. E. Neumann Co., 1520 Market St., Wheeling, W. Va.; P. H. Meyer Co., 635 S. Preston St., Louisville, Ky.; Salem Foundry & Machine Works, Salem, Va.; Ohio Elevator & Machine Co., Columbus, O.; American Elevator & Machine Co., 500 E. Main St., Louisville, Ky.; Edw. Bauernschmidt, 1528 N. Gay St., Baltimore; Ohio Valley Electric Co., Box 347, Steubenville, O.; A. H. Meyer Co., 51 Crape St., Oshkosh, Wis.; Greer Electric Construction Co., 205 E. 42nd St., New York; Myers & Co., Huntington; General Electric Co., Schenectady, N. Y.; John B. Kean, 2107 State St., Nashville, Tenn.; J. J. Nolan & Co., Inc., 235 Court St., Memphis, Tenn.; J. H. Druen Co., 613 Ninth St., Huntington; A. W. Kutsche & Co., 2111 Woodward Ave., Detroit, Mich.; Zipp-Beckmeyer Construction Co., Robson-Prichard Bldg., Huntington; Waldrop Heating & Plumbing Co., Rock Hill, S. C.; Chas. H. Hagen & Co., 301 Fourth Ave., Huntington; R. D. Cole Manufacturing Co., 5 Beekman St., New York. 5-21

Hotels and Apartments

D. C., Washington—W. S. Plager, Archt., 1930 Kearney St., N. W., preparing plans for \$30,000, 2-story, 59x68 ft., brick apartment, S. E. section; slag roof, hot water heat.

Ga., Atlanta—C. A. Tappan, 241 Spring St., N. W., expend \$25,000 for repairs to apartment, 425 Highland Ave., N. E., recently damaged by fire; 2 stories and basement, 40x125 ft., brick veneer, built-up roof.

La., Baton Rouge—Carl Campbell, 821 Poyd Ave., has low bid at \$13,614 from Berlie Watts, Baton Rouge, for 4-apt. bldg.; Jones, Roessle & Olschner, Archts., Maison Blanche Bldg., New Orleans, and Raymond Bldg., Baton Rouge.

La., New Orleans—Hilton Hotels, Inc., Wm. Irwin, Vice-Pres., Dallas, Tex., repair and remodel DeSoto Hotel; plans completed by company engineer in about 1 week.

Md., Montgomery County—Construction department of Sears, Roebuck & Co., Arthington & Homan Sts., Chicago, in cooperation with New York capitalist, reported, plans erection of 1200-room hotel in connection with development of 75-acre tract at Braemer Forest. Buildings Proposed—Miscellaneous.

Miss., Gulfport—Martin Kallman, Industrial Engr., purchased Pine Hills Hotel and change name to Southern Pines; develop

property for health and recreation resort; further developments include establishment of clinic, medical library, etc.

Mo., Kirkwood—Roller Realty & Building Co., W. R. Douglas, Sec., 7907 Forsyth Blvd., Clayton, erect 4-family apartment.

Tex., Houston—F. E. Hadley, 2001 Chenevert St., has permit for \$10,000, 4-apartment building, 4066 Dallas St.

Tex., Palestine—A. Lacey, of Campbell Hotel Co., Elm and Harwood Sts., Dallas, reported, plans erecting \$265,000, 7-story hotel.

Miscellaneous

Ark., Little Rock—Little Rock Baseball Assn., Ray Winder, Bus. Mgr., Democrat P. & L. Bldg., plans erection of stadium and other buildings, baseball park, etc.; \$50,000.

Fla., Hialeah—Miami Jockey Club, Inc., Jos. E. Widener, Chmn., Land Title Bldg., Philadelphia, Pa.; Frank J. Bruen, Mgr.-Dir., 5632 Sheridan Ave., Miami Beach, plans expending \$1,000,000 for improvements to race course, Hialeah Park.

Ga., Savannah—Harmonie Club, 4 E. Jones St., Dr. S. Eisenberg, Pres., remodel and enlarge bldg., Bull and Jones Sts.; 10-ft. extension.

La., New Orleans—Seventh St. Protestant Orphans Home, 3020 Magazine St., erect additions to bldg.; Ahern & Matthews, Archts., Balter Bldg.; bids in.

Md., Baltimore—Baltimore Country Club, Heyward E. Boyce, Pres., Redwood and Calvert Sts., selected office of Joseph Evans Sperry, Calvert Bldg., to prepare plans for \$250,000 clubhouse on Club Road site of structure previously burned; 2 and 3 stories, brick, Georgian architecture; plans to start work in about month; construction of swimming pool is under discussion. 3-19

Md., Montgomery County—Construction department of Sears, Roebuck & Co., Orthington & Homan Sts., Chicago, in cooperation with New York capitalist, reported, plans community development of 72-acre tract at Braemer Forest; project includes erection of hotel, apartment house and more than 100 dwellings involving expenditure of about \$9,000,000; hotel to have 1200 rooms will be initial unit, comprising 408 suites, 108 of which will be of duplex mode; group of English type of stores are planned for Brookville Road; company to be formed will supervise project.

Mo., St. Louis—Engineers Club of St. Louis, Walter O. Pennell, Pres., 4359 Lindell Blvd., reported, plans \$90,000, 2-story and basement, 75x102 ft., brick and rein. conc. addition, including auditorium to seat 800 people, 4 bowling alleys, 3 handball courts, locker room, supply room and kitchen; Hoerner, Baum & Froese, Archts., 3605 Laclede Ave.

N. C., Greensboro—Poole & Blue, Inc., N. Green St., leased dwelling, 342 N. Elm St.; remodel; erect 8-car garage; new furnishings and equipment.

S. C., Greenwood—Railway Express Agency, E. A. Murphy, Supt. of Bldgs., 325 Mitchell St., S. W. Atlanta, Ga., receives bids July 15 for brick, struc. steel express building; comp. roof.

Tex., Galveston—Galveston Beach Association, G. K. Jorgensen, hmn., Committee, plans erecting pavilion before July 4; 102x70 ft., seating 850, with band stand; R. R. Rapp, Archt., Guaranty Bldg. 5-28

Schools

Ala., Russellville—School Bd., R. C. Thomas, receives bids June 18 for \$48,000 elementary school; one story, 190x176 ft., brick or stone, tile and wood floors, cast stone, built-up roof, steel sash and trim; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham.

Ark., Boydel—Boydell Special School Dist., care of J. C. Gray, Chicot County Supt. of Schools, Lake Village, erect school building to replace burned structure; plans by State Bd. of Education, C. M. Hirst, State House, Little Rock.

Ark., Mena—Western Arkansas Junior Agricultural College Bd. of Trustees, A. W. Dodson, selected Clyde A. Ferrell, 1006 W. 6th St., Little Rock, to prepare plans for \$40,000 building; 2 stories, native stone. 5-28

Ark., Patmos—Patmos Consolidated School Dist., S. R. Hamilton, Pres., Bd. of Directors, soon ready for bids for one-story, brick veneer, 9-classroom and auditorium school; plans by State Dept. of Education, C. M. Hirst, Statehouse, Little Rock.

Ark., Star City—Glendale Rural Consolidated School Dist., care W. R. Stephens, Jr., Lincoln County Supt. of Schools, erect school building; plans by State Dept. of Education, Statehouse, Little Rock.

Ark., Warren—Warren Special School Dist. Trustees plan \$55,000 high school; plans by State Dept. of Education, Statehouse, Little Rock.

D. C., Washington—Department of Interior, John H. Edwards, Asst. Sec., 6117 Interior Bldg., having plans prepared by Albert I. Cassell, University Archt., for \$800,000, one-story, stone and brick library at Howard University, 2401 Sixth St., N. W.

D. C., Washington—National Training School for Boys, Bladensburg Rd., N. E., has low bid \$68,879 from Lee T. Turner, 1386 Perry Pl., N. W., for cottage building.

Fla., Tallahassee—Theta Upsilon Fraternity, Florida State College for Women, postponed erection of fraternity house until fall; Alvin R. Moore, Archt., 300½ S. Monroe St.

Ga., Athens—University of Georgia, Chas. M. Snellings, Chancellor, having plans revised by Hentz, Adler & Shutz, 1330 Candler Bldg., Atlanta, and ready for bids about July 30 for Hirsch Law School; 2 stories and basement, rein. conc., struc. steel, brick and tile.

Ga., Patterson—Bd. of School Trustees, H. L. Dixon, Sec., erect brick high school; brick, comp. shingle roof, 11 classrooms.

Ga., Rome—Bd. of Education, B. F. Quiggs, Chmn., receives bids June 23 for one-story and basement, brick, 8-classroom Eighth Ward elementary school; comp. roof; Lockwood & Poundstone, Archts., Marietta Bldg., Atlanta.

Ga., Sale City—Bd. of Education, T. K. Brock, Chmn., having plans prepared by Smith & Biggers, Murrah Bldg., Columbus, for \$25,000, one-story and basement, brick school; comp. roof, wood floors.

Ky., Mayfield—Graves County School Bd. will let contract for school, Pilot Oak, 1-room addition to Clear Springs School and J. B. Hardeman School.

La., Hodge—Jackson Parish School Bd.; bond election June 30. See Schools, La., Jonesboro.

La., Hahnville—Following contractors estimating on alterations and 2-story and basement additions to Hahnville and Destrehan high schools, bids June 16 by St. Charles Parish School Bd., J. B. Martin, Sec.: J. A. Hasse, Jr., 916 Union St.; Caldwell Bros., 816 Howard Ave.; J. A. Petty & Sons, Inc., Audubon Bldg.; following estimating on one-story and basement, brick Montz School, bids same date; J. A. Hasse, Jr., and Caldwell Bros., Wm. R. Burk, Archt., Balter Bldg., New Orleans.

La., Jonesboro—Jackson Parish School Bd. called election June 30 in Hodge-Jonesboro School Dist. No. 23, for \$150,000 bonds for \$125,000 brick high school in Jonesboro, and for \$25,000 brick grammar school at Hodge.

La., Lake Charles—Calcasieu Parish School Bd., H. A. Norton, Supt., called election July 7 on \$75,000 bonds in School Dist. No. 22 for school in addition to Lagrange High School to replace recently burned structure near Lake Charles; Livesay & Weidemann, Archts., San Jacinto Life Bldg., Beaumont.

La., New Orleans—Sisters of the Blessed Sacrament, 5100 Magazine St.; 3 bldgs., Palmetto St. near Pine St.; Wogan & Bernard, Archts., Canal Bank Bldg., advise plans on market ready June 15; about \$400,000; 2 stories and basement, rein. conc., brick, limestone, comp. and slate roofs, pile foundation, steam heat, marble, tile, terrazzo and wood floors.

Md., Annapolis—Anne Arundel County Bd. of Education, Geo. Fox, County Supt., will have plans completed June 9 for Stanton colored school; 60x100 ft., 2 stories, pine floors, slag roof, hot water heat; Supt. advises will be some time before plans for other schools are completed; Stanton school one unit of school building and improvement program to involve 23 structures; Buckler & Fenhagen, Archts., 325 N. Charles St., Baltimore.

Md., Baltimore—City, Public Improvement Comsn., H. J. Leimbach, Supv., Engr., has low bid from J. L. Robinson Construction Co., 522 Park Ave., at \$206,923, for West Baltimore Negro Elementary School.

Md., Baltimore—City, School Comms., Bureau of Maintenance, J. C. Siegel, 1230 E. 20th St., has following low bids for school repairs: Cont. E-22-31, plumbing at No. 63, Joseph Foster & Son, 224 N. Greene St., \$8892; Cont. E-26-31, plumbing and heating, No. 120, Chesapeake Engineering Co., 20 E. 21st St., \$10,600; Cont. E-24-31, plumbing at No. 81, DeCou & Chidlaw, Eutaw and Bidle Sts., \$8242; Cont. E-25-31, plumbing at No. 104, H. W. Gall & Son, 1026 Hillen St., \$9075; Cont. E-28-31, heating at No. 55, Chas. T. King, Inc., 1017 Cathedral St., \$24,388; Cont. E-23, plumbing at No. 63, DeCou & Chidlaw, \$8419; Cont. E-34-31, painting at No. 68, 72, 98, 98A, Basil B. Wells, 1617 Fred-

erick Ave., \$8436; Cont. E-36-31, painting at No. 23, 114, 215, Maryland Painting Co., American Bldg. and 201 S. Highland Ave., \$6250; Cont. E-35-31, painting at No. 27, 83, 292, Basil B. Wells, \$10,436.

Md., Brooklyn, Baltimore—Baltimore Public Improvement Comsn., H. L. Leimbach, Supv., Engr., opens bids June 17 for \$65,000 school; brick, 2 stories; Geo. R. Callis, Archt., 13 Melvin Ave., Catonsville; Jas. Posey, Mech. Engr., Balto. Trust Bldg.; Van Rensselaer Saxe, Struct. Engr., 217 N. Calvert St.; following contractors estimating: Chas. L. Stockhausen, 33 S. Gay St.; Mullan Contracting Co., 3945 Greenmount Ave.; W. E. Bickerton Construction Co., 515 Cathedral St.; Herbert J. West, Knickerbocker Bldg.; Century Construction Co., Hearst Tower Bldg.; J. L. Robinson Construction Co., 522 Park Ave.; D. M. Andrew & Co., 26th and Sisson Sts.; Frank Marine, 2 E. Lexington St.; Lacchi Construction Co., Munsey Bldg.; P. C. Street Engineering Co., 404 S. Paul St.; Henry L. Maas & Sons, Inc., 1110 Ensor St., all Baltimore; W. H. Sands, York Rd. and Washington Ave., Towson.

Md., Helen—St. Mary's County School Bd., Leonardtown, Miss Lettie M. Dent, Supt., plans erecting 6-room, brick high school.

Md., Sharpsburg—Washington County School Comms., B. J. Grimes, Supt., Court House, Hagerstown, plans to select architect early in 1932 for \$45,000 school.

Miss., Ellisville—City erect grammar school. Miss., Gulfport—Harrison County voted \$20,000 school building bonds.

Miss., Hattiesburg—The \$25,000 bonds recently reported voted by Forrest County for Eatonville Consolidated School Dist. has been declared void.

Miss., Houlika—Houlika Consolidated School Dist. Trustees receive bids June 19, extended date, for \$20,000, one-story, 150x150 ft., brick school; Frank P. Gates Co., Archts., New Merchants Bank Bldg., Jackson; list of bidders estimating noted.

Miss., Magee—Following contractors estimating on \$50,000 school for Magee School Bd. of Trustees, bids June 15: Bradley Bros. Construction Co., Laurel; Currie & Corley, Raleigh; Keeton & Fairley; Pat Fowler; Beckelheimer & Small, all Hattiesburg; Claude Westerfield, Mendenhall; S. L. Craft, Ellisville; W. J. McGee & Son, Lamar Bldg.; Jackson; McArthur & McEmore, 611, 22nd Ave.; Lockard & Vaughan, Kidder Bldg., both Meridian; Claude H. Lindsay, Archt., Tower Bldg., Jackson.

Mo., Branson—Bd. of Education having plans prepared by Heckenlively & Mark, Archts., 504 Landers Bldg., Springfield, for \$25,000, 2-story and basement brick and conc. school.

Mo., Cape Girardeau—Board of Education, A. M. Spradling, Pres., receives bids June 23 for 2-classroom addition to Washington school and 4-classroom, gymnasium-auditorium additions to Franklin School; total \$30,000; Wm. B. Ittner, Inc., Archt., 3617 Olive St., St. Louis.

N. C., Davidson—Davidson College, Dr. R. A. Dunn, Chmn. of Board Charlotte, adopted program, to be completed by 1936, calling for expenditure of \$2,500,000 in bldgs. and endowments.

N. C., Gastonia—Greek Orthodox Church, Archbishop Athenagoras, Long Island City, N. Y., plans remodeling buildings on Linwood property for school; probably erect college later.

Oklahoma—State Bd. of Public Affairs, W. C. Hughes, Chmn., Oklahoma City, plans expenditures of \$1,000,000 authorized by Legislature for schools and other State institutions; Layton, Hicks & Forsyth, Braniff Bldg., conslt. and supv. archts. of Board, have charge of majority of projects; other archts. to be selected later.

Okla., Fairland—Bd. of Education erect \$20,000, 2-story and basement, 78x101 ft., brick, semi-fireproof school; A. J. Love & Co., Archt., Atco Bldg., Tulsa.

Okla., Luther—Bd. of Education having plans prepared by Walter T. Vahlberg, Braniff Bldg., Oklahoma City, for \$60,000, one-story, brick and rein. conc. school.

Okla., Oklahoma City—Valley Brook District School Bd. voted levy for 2-room addition to grade school; also considers bond issue for \$30,000 six-room high school; Crooked Oak Dist. School Bd. voted \$12,000 bond issue for 3-room addition to grade school; Edmond Dist. plans \$15,000 four-room grade school; Mrs. Ida M. Hale, County Supt., 1537 W. 24th St.

Okla., Seminole—Sams School Dist. No. 20 erect \$13,000, brick school; maple floors, asbestos shingle roof; Albert S. Ross, Archt., Ada; bids in.

Tenn., Fountain City—Knox County Bd. of Education, W. W. Morris, Supt., Knoxville, call for bids at once for \$200,000 Central

High School; Bauman & Bauman, Archts., 815 Market St., Knoxville; C. A. Tarwater drawing plans for remodeling Gibbs High School.

Tenn., Nashville—State Bd. of Education, P. L. Harned, Chmn., soon ready for bids for \$150,000, 3-story and basement, rein. conc., brick, tile, stone trim industrial arts building, Centennial Blvd. at 35th St.; Marr & Holman, Archts., Stahlman Bldg.

Tenn., Gallatin—Bd. of Education, V. L. Harris, erect \$70,000, 2-story and basement, 165x165 ft., rein. conc., struc. steel, limestone or cast stone trim grammar school; comp. roof; Tisdale & Pinson, Archts., Ind. Bldg., Nashville; bids in June 12.

Tex., Farwell—City School Bd., F. W. McElroy, Pres., votes June 20 on \$30,000 bonds for erecting classrooms, auditorium and repairing old school building.

Tex., Flatonia—Flatonia Independent School Dist., E. A. Arnin, Jr., Pres., School Bd., having plans completed for high school building; R. Newell Waters, Archt., Weslaco.

Tex., Henderson—Gaston Ind. School Dist. voted \$40,000 bonds for school building; one story; DeFee & White, Archts., M. & M. Bldg., Houston.

Tex., Neches—Bd. of Trustees, Neches Rural High School Dist. No. 8, L. E. Spalding, Pres., receives bids July 3 for additions and repairs to brick building; Theo. S. Maffitt, Archt., Palestine.

Tex., Rio Grande City—Rio Grande City Independent School Dist., Oscar T. Vale, Sec., School Bd., opens bids June 19 for \$60,000 high school; 2 stories, brick, rein. conc.; R. Newell Waters, Archt., Weslaco; W. E. Simpson Co., Engr., 942 Milam Bldg., San Antonio.

Tex., Silsbee—Bd. of Education, Frank T. Blow, Pres., has low bid at \$37,000 from Nolan Stewart, Adams Bldg., Port Arthur, for 2-story, 8-classroom, library and auditorium high school; stucco, stone trim; Livesay & Weidemann, Archts., San Jacinto Life Bldg., Beaumont.

Tex., Ysleta—Ysleta School Dist. considering \$60,000 bond election for high school.

Va., Chesterfield—Chesterfield County School Bd., T. C. Williams, Supt., opens bids June 15 for \$12,000 to \$15,000 school, Grange Hall; brick walls, wood interior constr., 1 story, 107.4 x 57.4 ft., wood floors, brick foundation, 40-lb. tin roof; 6 rooms and auditorium; plans by State Dept. of Education, State Office Bldg., Richmond.

W. Va., Lumberport—Eagle Dist. (Harrison County) Bd. of Education, J. H. Knight, Pres., receives bids until June 17 for completing certain portions of high school; plans on file at office Stephen W. Ford, Archt., 305 Latstetter Bldg., Clarksburg.

Stores

Ala., Selma—Warren, Knight & Davis and Chandler C. Yonge, both Protective Life Bldg., Birmingham, preparing plans for building for Barton Department Store; 2 stories, brick, stone trim, built-up roof.

Fla., West Palm Beach—E. U. Roddy, 137 Peruvian Ave., erect \$15,000, one-story store on W. Clematis St.

Ga., Gainesville—Dr. R. D. Grigg erect drug store; 2 stories, 20x100 ft.

Md., Montgomery County—Construction department of Sears, Roebuck & Co., Arthington & Homan Sts., Chicago, in cooperation with New York capitalist, reported, plans number of stores in connection with development of 75-acre tract at Braemer Forest. See Buildings Proposed—Miscellaneous.

Mo., Cape Girardeau—Joe L. Moseley, Inc., Joe L. Moseley and Charles F. Fluhrer, 330 N. Park Ave., remodel 2-story, brick building, Broadway and N. Ellis St., for jewelry store and office building; A. F. Lindsay, Archt., 424 H. & H. Bldg.

S. C., St. Stephens—Paul Read, W. E. Pipkins and Rittenberg Estate will replace recently burned structures with brick buildings; besides rebuilding his store, Mr. Pipkins will also erect another brick store.

Tenn., Memphis—Joe Ricossa, 640 Jackson Ave., has low bid from J. L. Stewart, 3439 Stewart Ave., for three 1-story, 90x80 ft., brick stores and 61x42 ft. filling station, Lamar and Trezevant Sts.; Polk Agee, Archt., 147 S. Third St.

Tex., San Antonio—A. Martinez & Son, 726 S. Pecos St., purchased site, S. Pecos and El Paso Sts.; erect 1-story brick business bldg. upon expiration of lease on present location.

Tex., San Antonio—Eugene G. Lewenthal, 510 W. Myrtle St., erect 1-story business

bldg., Van Ness and N. Pine Sts., 80x46 ft., brick, rein. conc., struct. clay tile, tar and gravel roof, \$10,000; Harvey P. Smith, Archt., 312 Natl. Bk. of Commerce Bldg.; Lilly & Drought, Engrs., 1104 Frost Natl. Bk. Bldg.

Theatres

Ky., Cave City—Park Way Realty Co., W. R. Gardner, erect moving picture theater.
S. C., Aiken—Willis Irvin, Archt., S. F. C. Bldg., Augusta, Ga., preparing plans for motion picture theater; 2 stories, brick and tile.
Tex., Longview—East Texas Theater Corp., Inc., Sol E. Gordon, Pres., Perlstein Bldg., Beaumont, having plans prepared by J. A.

Cararas, Henderson, and E. M. Freeman, City Bank Bldg., Shreveport, La., for \$30,000, 55x150 ft. theater and office building. 3-12

Warehouses

Ark., Walnut Ridge—The Goodwin Co., R. A. Lovan, Mgr., plans produce warehouse.
Ga., Rome—Rome Transfer Co. having plans prepared by J. C. Wise, 855 Peachtree St., N. E., \$40,000, one-story, brick warehouse; tar and gravel roof; 30,000 sq. ft.
N. C., Greenville—R. J. Reynolds Tobacco Co., Winston-Salem, erect rein. conc. and brick warehouse; built-up roof; plans by own Engr. Dept.; bids in June 12.

Md., Baltimore—J. M. Wagner, 1703 Harford Ave., erect brick, stone and stucco residence, Norman Ave.; 2½ stories; Fred E. Beall, Archt., 334 St. Paul St.; Adam Kratz, Contr., 118 S. Carrollton Ave.

Md., Baltimore—Jos. O. Blair, 3613 Grantley Rd., erect 3 cinder block dwellings, 3600 block Sequoia Ave.; 2 stories, 30x40 ft.; owner builds.

Md., Baltimore—Frank Novak Realty Co., 33rd St., erect 3 dwellings and garages, 3303-13 Ford Ave.; also erect 2-story brick dwelling and garage, 2211 Chesterfield Ave.; total \$32,000; also 34 brick dwellings, 3400 block Ramona Ave.; last about 16.7x46 ft. and 17.8x34 ft.; \$100,000; G. F. Smithson, Archt., 2225 Pelham Ave.; owner builds.

Maryland (Montgomery County)—Sears, Roebuck & Co., (building dept.), Arthington & Homan Sts., Chicago, Ill., and New York capitalist, reported, plan community development over period of years, to include erection of about 130 dwellings, at Braemar Forest, Montgomery County, Md.; total expenditure of about \$9,000,000; company to be formed to supervise project.

Md., Baltimore—Albert H. Miller, 131 Colvin St., erect brick residence, 2415 Kentucky Ave.; 1½ stories, 28x66 ft.; A. C. Witherspoon, Contr., 548 E. 38th St.; plans completed.

Md., Baltimore—Jas. R. Cox, 4547 Harford Rd., erect stone and stucco residence, Arcadia section; 2 stories, 25x30 ft.

Md., Baltimore—G. Palladi, 718 E. 30th St., has permit for 8 frame dwellings, 5220-34 Liberty Heights Ave.; 2 stories, 22.6x34 ft., slate roof; total \$20,000; Geo. Wessel, Archt., 601 W. 40th St.; owner builds.

Md., Baltimore—Maurice Moyer, Edmondson Ave. and Plymouth Rd., erect frame residence, Merrydale; 2 stories, 30x40 ft.

Md., Baltimore—Ernest R. Gorsuch, 34 S. Eutaw St., erect 2-story stone residence, Crest Rd., Hill Top Park; E. H. C. Browne, Archt., 1018 Fidelity Bldg.; Geo. J. Smith, Contr., 6214 Smith Ave., Mt. Washington.

Md., Mt. Washington, Baltimore—Meyer Kushnick, Franklin Bldg., erect one-story stucco residence, Ridgedale Rd.; E. H. C. Browne, Archt., Fidelity Bldg., Baltimore; Geo. J. Smith, Contr., 6214 Smith Ave., Mt. Washington.

Md., Mt. Washington—Elmer S. Ottenheimer erect residence, Sulgrave Ave.; stucco, 2 stories; E. H. C. Browne, Archt., Fidelity Bldg., Baltimore; Geo. J. Smith, Contr., 6214 Smith Ave., Mt. Washington.

Mo., St. Louis—W. F. Linders, care Julius E. Tarling, Archt., 2806 N. Grand Blvd., erect brick residence, Pasadena Hills; 2 stories and basement, 30x34 ft., 2-car garage; J. Chas. Mueller & Son, Contr., 3528 Hebert St.

Mo., St. Louis—Edwin J. Lee erect 3 brick dwellings, 5310-27 Lindenwood St.; 1 story, 26x44 ft., comp. shingle roofs, hot air heat; total \$16,500; F. Pierce, Archt., both 3808 S. Gran; owner builds.

Okla., Oklahoma City—Homer Smith, 2616 W. 12th St., started work on \$50,000 residence, Nichols Hills; brick veneer, 2 stories and basement, 30x100 ft.; E. W. Staas, Contr.

Okla., Oklahoma City—W. L. Laws erect \$10,000 residence; brick veneer, 2 stories, 32 x33 ft.; W. J. Laws Co., Archt., First Natl. Bk. Bldg.; day labor.

Tenn., Memphis—Leroy King, 2714 Lombardy Place, Chickasaw Gardens, started work on \$100,000 brick and stone residence, Park Ave. and Cherry Rd.; 2 stories and basement; Bryant Fleming, Archt., Corson House, Ithaca, N. Y.; John W. Johnson, Contr., Central Ave., Normal, Tenn. 12-5-29

Tex., Beeville—T. P. Morgan, 202 Mary Louise Drive, let contract at \$10,143 to V. L. Rasmussen, 560 E. Cincinnati St., for ranch house, 8 miles from Beeville; Marvin Elckentrant, Archt., 710 Maverick Bldg., all San Antonio. 6-4

Va., Richmond—W. J. Morrissett, 1827 Hull St., let contract to L. T. Chapman, 1304 Bainbridge St., Richmond, for residence. 5-7

Va., Quantico—Navy Dept., Bureau of Yards and Docks, Washington, D. C., let contract at \$62,140 to Green & Stowe, 532 McDowell St., Welch, W. Va., for disciplinary barracks, Marine Barracks. 6-4

Va., Richmond—T. R. Richardson let contract to B. L. Mahone for residence, 3319 North Ave.

Va., Richmond—Marsteller Construction Corp., Dickson Bldg., have contract for \$15,000 dwelling, Algonquin Park; Philip B. Moser, Archt., Law Bldg., both Norfolk.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Fla., Warrington—Ancient Free and Accepted Masons let contract at \$15,144 to J. W. Eley for temple, New Warrington.

Md., Baltimore—Knights of Columbus, Dr. John J. McGinity, Chmn., Bldg. Comm., Eastern and Ellwood Aves., let contract to E. Eyring & Sons, 808 S. Conkling St., for brick lodge bldg., Highland and Fleet Sts.; 2 stories and basement, 140x40 ft.; Kubitz & Koenig, Engrs., Emerson Tower.

Md., Cockeysville—Erie City Iron Works, East Ave., Erie, Pa., has contract at \$23,065 for boilers for \$600,000 first unit of Home for Dependents of Masons, Bonnie Blink near Cockeysville; heating, Westminster Hardware Co., Westminster, Md., \$28,724; plumbing, M. Nelson Barnes, 807 N. Howard St., \$38,600; wiring, Geo. W. Walther & Co., 712 N. Howard St., \$27,147; elevator, Otis Elevator Co., 120 S. Paca St., \$4004; all Baltimore; Wm. W. Emmart, Archt., Union Trust Bldg.; Sandlass & Wieman, Struct. Engrs., 107 W. Saratoga St.; Henry Adams, Inc., Const. Engr., Calvert Bldg.; M. A. Long Co., Contr., 10 W. Chase St., all Baltimore. 5-28

Bank and Office

La., Shreveport—First National Bank, Market St., remodel 3 upper office floors; gum trim, marble wainscoting, remodel elevators; Clarence W. King, Archt., Giddens-Lane Bldg.; W. Murray Werner, Contr., 417 Milam St.

Md., Baltimore—Dr. Ryland O. Sadler, 2318 N. Charles St., remodel and enlarge bldg., same address; \$10,000; G. Walter Tovell, Contr., Eutaw & Monument Sts.

Md., Baltimore—Federal Land Bank, St. Paul and 24th Sts., let contract to Thos. Hicks & Sons, 106 W. Madison St., for interior alterations; \$25,000; hollow tile, marble, mastic flooring, spiral stairs, railing; Wyatt & Nolting, Archts., Keyser Bldg. 6-4

Churches

Tex., San Saba—First Baptist Church, J. D. Coleman, Pastor, let contract to J. C. Ray, Brownwood, for church; San Saba marble and pressed brick, 2 stories and basement, 50x80 ft., wood and cement floors, seat 650; Will N. Noonan, Archt., Builders Exch. Bldg., San Antonio.

City and County

Ark., Russellville—Pope County Bd. of Comms. let contract at \$118,182 to Gordon Walker Co., Pyramid Life Bldg., Little Rock, for court house; first story Batesville stone, brick above, 4 stories and basement, 120x74 ft., conc. and marble floors, built-up roof; H. Ray Burks, Archt., Wallace Bldg., Little Rock. 5-14

La., Crowley—City Council let contract at \$59,875 to C. G. Kershaw Contracting Co., 1908 Lee St., Alexandria, for city hall and auditorium bldg.; rein. conc., brick, cast stone trim, 2 stories, rein. conc. foundation, steel and iron work, hardwood terrazzo and tile floors, built-up and comp. roof, steel and iron work, steel sash, brass and bronze work, sheet metal work, metal doors; auditorium seat 700; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans. 5-21

Md., Woodlawn, Baltimore—Baltimore County Bd. of Comms., John R. Haut, Ch. Clk., Towson, let contract to Reich & Leinbach, Catonsville, for fire station, Windsor Mill Rd. near Woodlawn. 5-26

Okla., Tulsa—City let contract to R. K. Hughes, Kennedy Bldg., for branch libraries, Greenwood, North Side, West Tulsa and East Side; total \$70,000; brick and conc., slate, tile or asbestos shingles, Moleum or rubber tile floors, hollow and drain tile, metal lath, steel sash, plate glass; Donald McCormick, Archt., 526 Exchange Place. 4-16

Tenn., Lafayette—Macon County Court, W. W. Tuck, Chmn., let contract to John Moore, 149 Fourth Ave., North, Nashville, for jail; fireproof, brick and conc., 2 stories and basement, 25x35 ft.; Geo. C. Norton, Archt., Ind. Life Bldg., Nashville. 4-30

Dwellings

D. C., Washington—Edson W. Briggs Co., 1001 15th St., N. W., started work on \$40,000 dwelling brick and stone, 3 stories and basement, 38x53.6 ft., hardwood floors, conc. foundation, slate roof, limestone, marble, plaster board, slate and possibly asbestos shingle roof; John M. Donn, Archt., 1223 Connecticut Ave.; Thos. W. Marshall, Engr., 1341 Connecticut; owner builds. 5-28

D. C., Washington—Dr. P. J. Putzki, 2015 Q St., N. W., erect brick residence, same address; 2 stories, \$15,000; Volney D. Chase, Archt., 923 15th St., N. W.; Tunis F. Collier, Contr., 1109 20th St., N. W.

D. C., Washington—Henry J. Connor, 321 Connecticut Ave., N. W., has permit for 2 dwellings, 14th St., N. W.; brick and cinder block, 2 stories; total \$19,000; owner builds.

D. C., Washington—R. S. Pagliochini, care Edw. St. Cyr Barrington, Archt., 1336 New York Ave., erect half-timber residence, Alabama and Branch Aves.; 2½ stories and basement, 42x56 ft., hardwood floors, slate roof, vapor vacuum heat, oil burner, 4-car garage work by sub-contract.

D. C., Washington—Henry Herbert, 1530 Kearney St., N. E., erect brick residence, 5467 31st St.; 2 stories, slate roof, hot water heat; owner builds.

D. C., Washington—Isaac M. Feldman, 1938 12th St., erect 2 brick dwellings, 1711-13 Minnesota Ave., S. E.; brick, tin and asbestos shingle roof, hot water heat, 2 stories; total \$10,000; L. W. Giles, Archt.; owner builds.

D. C., Washington—Security Home Co., 1427 I St., N. W., erect 3 brick dwellings, 3638-40 Jenifer St. and 5317 Chevy Chase Pkwy.; 2 stories, slate roofs, hot water heat; total \$21,000; Geo. T. Santmyers, Archt.; owner builds.

Fla., Miami Beach—J. A. Turrell, 10 Hampshire St., Boston, Mass., erect residence, garage, etc., 4400 block Meridian Ave.; C. R. Clark Co., Contr., 925 Lincoln Rd.

Ga., Atlanta—Mrs. L. B. George, 1284 Glenwood Ave., erect brick veneer residence, 111 Moreland Ave., S. E.; 1 story, 5 rooms and bath, comp. roof; owner builds.

Ga., Atlanta—G. C. Holbrook, 1745 Sylvan Rd., S. W., erect brick veneer residence, Belvedere Circle near Wieca Rd., N. W.; 2 stories and basement, 2 baths, comp. roof, steam heat; owner builds.

Ga., Atlanta—H. W. Nicholes, 142 Brighton Rd., N. E., erect brick veneer residence, Brighton Rd. and Wakefield Drive, N. E.; 2 stories and conc. basement, hardwood and tile floors, tile or slate roof, steam heat; owner builds.

Ga., Atlanta—Pittman Construction Co., Rhodes Bldg., erect conc. and frame dwelling, Wilson and Gladstone Rd., Spring Lake Park; 1 story and basement, conc. foundation, hardwood and tile floors, comp. shingle roof, steam heat.

La., New Orleans—O. Gerber, 1810 State St., erect duplex, 1810 State St.; sheet metal work, orn. iron work; Hyman Rabinowitz, Contr., 740 Poydras St.

La., Shreveport—E. A. Frost, 351 Jordan St., started work on country lodge, Mooringsport Rd.; \$35,000; swimming pool, landscaping; Edw. F. Neild, Archt., City Natl. Bk. Bldg.; W. Murray Werner, Contr., Commercial Bk. Bldg.

Md., Baltimore—Jos. M. Chetelat & Sons, Bldrs., 4707 Park Heights Ave., erect 7 frame dwellings, 5200-12 Barbara Ave.; \$18,200; 1½ stories, 26x32 ft.

Government and State

Ala., Maxwell Field, Montgomery—Constructing Quartermaster erect rein. steel, conc. and tile detachment barracks and hospital, fire station and guard house and post exchange; struct. steel and tile, 39x111 ft., 37x44 ft. and 50x100 ft., and 63x69 ft., conc. floors and foundations, tile roofs; total \$136,500; Samford Bros., Inc., Contrs., 301 Washington Ave., Montgomery. 5-21

Ark., Little Rock—B. Homer Heard has contract for roof repair, stone repointing and skylight work, \$25,000 to \$30,000, on state capitol; plumbing, \$9000 to \$10,000, Pfeiffer Plumbing Co., 717 Main St.

D. C., Washington—Architect of The Capitol, David Lynn, let contract at \$567,790 to McClosky & Co., 34th and Vintage Sts., Philadelphia, Pa., for alterations to C Street Facade, Senate Office Bldg.; free-standing colonnade along C St., about 330 ft. long, projecting about 6 ft. from present bldg.; work includes excavations, rein. conc. footings and slabs, common brick backing for exterior walls, exterior granite and marble work, copper roofing and flashing, ornate bronze work, repairs to marble floors, changes in plumbing, heating and elect. work; models and carving; carpentry and millwork; plastering, painting and glazing. 4-23

Ga., Atlanta—Federal Penitentiary, H. F. Frick, Ch. Clk., erect \$50,000 dormitory, Honor Farm, Panthersville; solid brick, rein. conc. frame, rein. conc. floor and roof slabs, 2 stories and basement; day labor.

Ga., Fort Benning—Constructing Quartermaster let contract at \$244,417 to Murphey Pound, Hill Bldg., Columbus, for units E, F, G and H of Barracks No. 2; plain and rein. conc., brick and tile, 3 and 4 stories with basement, 50x490 ft., conc. floors covered with terrazzo and asphalt tile, built-up tar paper, tar conc. and cinder roof, cast stone, elect. refrigerators, limestone, marble, metal doors, steel sash and trim, salt glazed tile, ventilating fans. 6-4

Md., Pikesville—Commanding General, Maryland National Guard, Armory Place and N. Howard St., Baltimore, let contract at \$21,990 to C. W. Schmidt, Hearst Tower Bldg., for stable, 110th Field Artillery. 6-4

S. C., Rock Hill—Treasury Dept., Jas. A. Wetmore, Atc. Supvg. Archt., Washington, D. C., let contract at about \$200,000 to Batson-Cook Co., Inc., West Point, Ga., for post office, court house, etc.; rein. conc., brick and tile, stone trim, struct. steel, 3 stories, marble and tile work. 5-28

Tenn., Jackson—Col. R. H. Bond, Chmn., Bldg. Comm., 211 E. Baltimore St., let contract to H. M. McGuire Construction Co., Derman Bldg., Memphis, for \$100,000 armory-auditorium; brick and conc., 3 stories, 229x142 ft., hardwood, tile and comp. floors, conc. foundation, built-up hip roof, cast stone, rolling partitions, steel sash and trim, ventilators, wire glass; furnishings, equipment, etc., \$15,000; Parish & Tuggle, Archts., McCowat-Mercer Bldg., Jackson. 4-23

Hospitals, Sanitariums, Etc.

D. C., Washington—Constructing Quartermaster, Army Medical Center, let contract at about \$230,000 to H. R. Blagg Co., Inc., 1229 E. Third St., Dayton, O., for warehouse, laundry and bakery; brick and conc.; laundry 2 stories and basement, 66x108 ft.; bakery 1 story, 33x56 ft., wood and conc. floors; conc. roofs, floors and foundations; dumb waiters, elevators, terrazzo, tile and comp. flooring, marble, metal doors, built-up roofing, hollow tile, brass and bronze work. 6-4

N. C., Charlotte—Acme Plumbing & Heating Co., 24 E. Fifth St., has plumbing contract for \$100,000 addition to Mercy Hospital, 2100 E. Fifth St.; heating, A. Z. Price Co.; Lotta Arcade; elect. work, Robinson Elec. Co., Inc., 421 S. Tryon St.; kitchen and pantry equipment, Frank Martin, Inc., 228 S. College St., all Charlotte, and Cloeckler Co., Pittsburgh, Pa.; Chas. C. Hook and Walter W. Hook, Archts., Commercial Bk. Bldg., Charlotte; Rev. Father Michael, Consultant, Belmont Abbey, Belmont, N. C. 5-7

La., New Orleans—Acme Building Supply Co., 8th Ave., Meridian, Miss., has millwork contract for \$500,000 Flint Goodridge Hospital; plumbing, heating, etc., Mayer Godchaux Co., Inc., 1331 St. Charles Ave., New Orleans; cement paving, W. F. Schuler, 2415 Gen. Taylor St.; ornate and disc. iron, Jas. R. Sutton, 3904 Erato St.; sheet metal work, Groesbeck-Clothworthy Co., 1315 Calhoun St.; terrazzo, United Tile & Terrazzo Co., Inc., Balter Bldg.; glass and glazing, Pittsburgh Plate Glass Co., Girod and Commerce Sts.; Vitrolite and tile work, Southern Builders Material Co., Maison Blanche Bldg., all New Orleans; rein. steel, Laclede Steel Co., Arcade Bldg., St. Louis, Mo.; Moise H. Gold-

stein, Archt., Amer. Bank Bldg.; Geo. J. Glover Co., Inc., Contr., Whitney Bldg. 6-4

Md., Towson, Baltimore—Sheppard & Enoch Pratt Hospital, Alfred W. Straham, Sec., 212 C. of C. Bldg., let contract to Thos. Hicks & Sons, 106 W. Madison St., for alterations to women's bldg. in connection with installation of elevator; Wyatt & Nolting, Archts., Keyser Bldg.

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Comsn. let following contracts for Group 5 for \$5,000,000 Mississippi Insane Hospital: Tuberculosis bldg., W. J. McGee & Son, Robert E. Lee Hotel, Jackson, at \$89,620; supt.'s dwelling, C. G. Kershaw Contracting Co., Woodward Bldg., Birmingham, Ala., at \$26,000; and doctors' apt. to same firm at \$47,000; patients' cottage, Type A-2, M. T. Reed Construction Co., Belzoni, Miss., at \$33,793; patients' cottage, Type A-3, Garber & Dickson, Jackson, at \$34,232; and cottage, Type A-4, to same firm at \$34,232; entrance structure No. 1, W. C. Salley, Ouachita Natl. Bk. Bldg., Monroe, La., at \$4989; tropical house, W. J. McGee & Son at \$49,650; low bids as follows for remainder of work: Entrance structure No. 2, Garber & Dickson, Jackson, and Beckelheimer & Small, Hattiesburg, Miss., similar bids of \$2700; wiring, Standard Electric Co., Gulfport, Miss., at \$6849; plumbing and heating, Alonzo B. Hayden, Inc., Pass Christian, Miss., at \$41,000; plumbing, heating and wiring, S. S. Richard, Jackson, at \$42,870; generator sets 400 kw. horizontal, Uniflow, Elliott Service, Ridgway, Pa., at \$277,718; generator 400 kw. vertical, Uniflow, Walter Castaneda, Inc., Maritime Bldg., New Orleans, La., at \$27,523, on on generator 500 kw. vertical Uniflow, from same firm at \$30,419; generator 200 kw. turbo generator, A. M. Lockett & Co., Ltd., Q. & C. Bldg., New Orleans, La., at \$8908; generator 300 kw. turbo generator, Walter Castaneda, Inc., Maritime Bldg., New Orleans, at \$9722; N. W. Overstreet, Archt., Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 5-28

Miss., Jackson—State Hospital Removal, Improvement and Land Sale Comsn. let contracts for Negro Group No. 1, \$5,000,000 Mississippi Insane Hospital, as follows: Hospital bldg., W. J. McGee & Son, Jackson, at \$55,912; dining hall and kitchen, Lockard & Vaughan, Kidder Bldg., Meridian, at \$55,912; 2 patients' cottages, M. T. Reed Construction Co., Belzoni, at \$36,833 each; epileptic cottage No. 1, Oden & Glenn, Carter Bldg., Hattiesburg, at \$35,535 and epileptic cottage No. 2 to same firm at \$35,400; convalescent cottage No. 1, M. T. Reed Construction Co., Belzoni, at \$23,733; convalescent cottage No. 2, Beckelheimer & Small, Hattiesburg, at \$23,500; N. W. Overstreet, Archt., Standard Life Bldg., Jackson; Vinson B. Smith, Advisory Archt., Gulfport. 5-14

Tex., Galveston—Voss & Koock, 301 E. Third St., Austin, have contract for kitchen equipment for \$150,000 State Psychopathic Hospital; beds and mattresses, Bowman-Cravens Furniture Co., 412 Congress St., Austin; furniture, Ellison Furniture & Carpet Co., 211 W. 7th St., Fort Worth, Kaufman, Myers & Co., 2414 D St., Galveston, and Bickley Bros., 710 Milam St., Houston.

Hotels and Apartments

Ark., Little Rock—A. J. Holland, 209 Palm St., and C. M. Sandlin, Contrs., have permit for \$10,000 apartment, 1005 Scott St.

D. C., Washington—Seaboard Realty Co., Inc., Bldrs., applied for permit for \$125,000, 5-story, brick and conc., 90x124 ft., brick and conc., 45-unit apartment 7011 Georgia Ave., N. W.; Louis T. Rouleau, Archt., Investment Bldg.

Fla., Miami Beach—Wm. F. Whitman, 3201 Collins Ave., let contract to Mead Construction Co., 1000 Lincoln Road, for \$180,000, 3-story, 120x160 ft., conc. and tile block Indian Creek Apartments, Collins Ave. between 33rd and 34th Sts.; 30 apartments with hotel and docking facilities in creek and bathing facilities in the ocean; number of cabanas, solarium on roof, soundproof walls and floors, elevator service, refrigeration, steam heat, Spanish architecture; M. F. Comer Bridge & Foundation Co., 1000 N. W. N. River Drive, nearly completed foundation; Roy F. France, Archt., 952 Alton Road, Miami Beach; Maurice R. Connell, Mech. Engr.; Belsham, Jorgen & Schreffler, Struc. Engrs., Calumet Bldg., both Miami. 5-14

Okla., Tulsa—Col. R. T. Daniel, 114½ E. Third St., has permit for 12 brick dwellings, eastern section of city; \$3250 each; E. W. Chambers, Archt.-Contr., 208 Richard Bldg. 1-1

Tenn., Nashville—W. O. Parmer, Belle Meade Farm, let contract to Cowan Lumber & Planing Mill Co., Dickson, for \$65,000, 3-story, brick, limestone trim, fireproof Clark House, 315 Seventh Ave., N.; to be operated by T. A. Clark; Dougherty, Wallace & Clemmons, Archts., cotton Exchange Bldg.

Va., Roanoke—Norfolk & Western Railway Co., W. P. Wiltsee, Ch. Engr., let contract to J. F. Pettyjohn & Co., 212 Eighth St., Lynchburg, for \$180,000 addition to Hotel Roanoke, Jefferson & Shenandoah Ave., N. E., Kenneth M. Hyde, Mgr.; steel, brick and stucco, 4 stories, 53x110 ft., 60 rooms, 25-car garage; work under way. 5-28

Miscellaneous

Ga., Athens—Ernest Durham erecting clubhouse, constructing lake of several acres and providing recreation park in connection with development of 181-acre tract on Durham Drive and Indian Creek Road, two miles beyond Voncale Estates.

Md., Baltimore—Louis Hasslinger, J. W. Walker, 1707 N. Charles St., let contract to J. Henry Smith, 300 E. 33rd St., for improvements to 4-story, brick building, 1701-5 N. Charles St., for lunch room; Frederick Thomas, Archt., 733 E. 33rd St.; Herman F. Doeelman, Struc. Engr., Baltimore Trust Bldg. 5-14

Schools

Ala., Tuskegee Institute—Tuskegee Normal and Industrial Institute, R. R. Taylor, Dir. of Industries, let contract to T. C. Windham & Son, 1620 Fourth St., N., Birmingham, for \$200,000, 3-story, 87x157 ft., brick, natural or artificial stone trim, steel frame library building; work started; tile floors, hollow tile partitions, roof of conc. slab with built-up roof covering; plans for \$300,000, 3-story and basement, 160x70 ft., rein. conc., brick and tile science building will be ready in next three weeks; it is the plan to erect this building by student labor; Taylor & Persley, School Archts.; Fosdick & Hilmer, Mech. Engrs. 6-4

Ark., Blevins—Blevins Special School Dist., J. J. Bruce, Pres., Bd. of Directors, let contract to Bardwell & Freeman, Prescott, for one-story, 5-room, brick veneer high school and improvements and 2-room addition to present school; \$15,000; D. F. Weaver, Archt., Arkansas Bank & Trust Bldg., Hope. 1-29

Ark., Dardanelle—Dardanelle Special School Dist., Herbert C. Scott, Pres., let contract to W. H. McClure, for \$50,000, 2-story and basement, 11-room and auditorium, brick and stone school; Erhart & Eichenbaum, Archts., Gem Bldg., Little Rock. 5-28

Ark., Vandervoort—Vandervoort Special School Dist., A. W. Dodson, Supt. of Schools, Mena, let contract to W. E. Jones, Porter, for \$10,000, one-story, stone and conc., 5-room and auditorium high school; plans by State Dept. of Education, Statehouse, Little Rock. 4-23

Ga., Dalton—Bd. of Education, W. C. Bowen, Chmn., Bldg. Committee, let contract to Barrett Construction Co., Dalton, at \$42,275, for school; Daniell & Beutell, Archts., 701 Georgia Savings Bldg. 5-21

Ga., Statesville—Donald McIver, 1105 Candler Bldg., Atlanta, has contract for \$18,000 school for Echols County Bd. of Education; Lloyd Greer, Archt., Valdosta. 5-21

Ky., Louisville—University of Louisville has permit for \$32,500, 92x100 ft. gymnasium; A. Bornstein, Contr., 1219 Logan St.; D. X. Murphy & Bro., Archts., Louisville Trust Bldg.

Ky., Owensboro—Bd. of Education let contract to Key Bros. Construction Co., Murray, for Longfellow School; plumbing, Owensboro Plumbing & Heating Co., 111 E. Third St., Owensboro; heating, Freyn Bros., 1028 N. Illinois St., Indianapolis, Ind.; electric, F. A. Clegg & Co., 110 S. First St., Louisville; Wm. B. Ittner, Archt., 20th floor Continental Life Bldg., St. Louis, Mo. 5-28

Md., Baltimore—City, Public Improvement Comsn., H. J. Leimbach, Supvg. Engr., let contract to W. E. Bickerton Construction Co., 515 Cathedral St., at \$63,118 for school, Morrell Park, Washington Blvd. and Spence St.; John J. Zink, Archt., 2826 Overland Ave.; Kubitz & Koenig, Engrs., Emerson Tower Bldg.; James Posey, Mech. Engr., Baltimore Trust Bldg. 6-4

Md., Towson, Baltimore—G. F. Hobel, Daniels Ave., Woodlawn, has contract for slate roofing for Ekko School; slag roofing, Chas. S. Dell, Inc., 2400 Aisquith St.; elect. wiring, Chas. A. Russell, 10 W. Chase St.; metal ceiling, W. A. Trail; hardware, R. C. Hoenes Co., Inc., 512 N. Eutaw St., all Bal-

timore; Smith & May, Archts., Balto. Trust Bldg.; Consolidated Engineering Co., Inc., Contr., St. Paul and Franklin Sts., both Baltimore. 4-9

Mo., Eolia—Bd. of Education let contract to Horace Hoskins for \$17,000, one-story, 80x90 ft., brick school; Ludwig Abt, Archt., Riegel Bldg., Moberly. 4-16

Mo., Freeburg—Bd. of Education, B. I. Wegman, Sec., let contract at \$18,250 to Salisbury Bros., 13th and Thompson Sts., Sedalia, for one-story, 112x79 ft., brick, tile, stone trim school; H. E. Wagenknecht, Archt., 719 McDonald St., St. Joseph. 4-16

Mo., Kirkwood, St. Louis—Rott School Dist., Harry D. Ford, Pres., let contract at \$30,642 from Wm. A. Bopp, 123 W. Jefferson St., for 2-story and basement, L-shape, brick school; Robert Francis Denny, Archt., 1632 Paul Brown Bldg.; Taxis & Becker, Consit. Engr., Chemical Bldg., both St. Louis. 4-30

Mo., Salem—Bd. of Education, T. P. Dent, Sec., let contract to G. F. Hentschel, 1211 S. Pickwick St., Springfield, for \$40,000, one-story and basement, brick and conc., 8-room and auditorium school; Hawkins & Nicholas, Archt., 406 McDaniel Bldg., Springfield. 4-23

Mo., St. Joseph—Bd. of Education, A. L. Loring, Sec., let contract to W. Underhill Construction Co., 528 Medical Arts Bldg., Kansas City, at \$114,669, for 2-story and basement, brick, stone and rein. conc. Lindbergh School; heating and plumbing, Industrial Heating & Plumbing Co., Eighth and Atchison St., \$24,800; electrical work, H. C. Kerns Electric Co., 1725 Frederick St., \$5791; Webb Siemens, Archt., Bartlett Bldg.; Wm. B. Ittner, Inc., Asso. Archt., Continental Life Bldg., St. Louis. 1-29

Tenn., Pulaski—Martin College let contract to J. Lindsay, Pulaski, for 2-story and basement, 56x102 ft., brick, conc. and stone gymnasium; Geo. D. Waller, Archt., Ind. Life Bldg., Nashville. 4-30

Tex., Beeville—Beeville Ind. School Dist. Trustees, John R. Beasley, Pres., let contract to Smith & Galbraith, Harlingen, for grade school, Mexican school, negro school and gymnasium; brick, tile and rein. conc.; plumbing and heating, Burrows Hardware Co.; electric wiring, Beeville Electric Co.; Mickey Leahy and Sayler Electric Co.; roofing, Beeville Sheet Metal Works; painting, E. G. Dewees; Malcolm G. Simons, Builders Exchange Bldg., San Antonio, and Beeville, and W. C. Stephenson, Beeville, Asso. Archts. 6-4

Tex., Tyler—School Bd. let contract at \$18,327 for addition Bonner Ward School.

Va., Hampton—School Bd. erecting additions and making improvements to Hampton High School; J. W. Davis, Contr., Law Bldg., Newport News; Charles M. Robinson, Archt., Times-Dispatch Bldg., Richmond. 3-28

Va., Port Richmond—Joseph Heye, 1604 Monteco Ave., Richmond, has contract for convent and school for Blessed Sacrament Roman Catholic Parish, Rev. J. S. Lubowski, Pastor; A. Byron Williams, Archt., Citizens & Marine Bank Bldg., Newport News. 6-4

Va., Princess Anne—Princess Anne County School Bd., Robert J. Johnson, Supt., let contract to Miner & Miller, Virginia Beach, for elementary school to replace burned building, at \$25,385, Rudolph, Cooke & Van Leuwen, Archts., Arcade Bldg., Norfolk. 5-28

Stores

D. C., Washington—A. Eberly's Sons, Inc., 718 Seventh St., N. W., ready for sub-bids for 2-story, 25x100 ft., brick shop and office building, 1108 K St., N. W.; slag roof, steam heat, steel sash; John W. Kearney, Archt., 1417 K St., N. W.

Ga., Atlanta—Dr. J. D. Marritt, 228 Forrest Ave., N. E., erect store, 230 Forrest Ave., N. E.; story, brick, tar and gravel roof, plate glass, conc. floor; private plans; owner builds.

Ga., Atlanta—G. H. Butler, Glenn Bldg., has contract for store, Peachtree and Rumson Rds.; 1 story and basement, 4 units, conc. foundation, struct. steel beams, brick walls, conc. roof slab, tar and gravel roof, steel sash.

Ga., Franklin—Angel Estate, care Zeb Angel, erect \$25,000, 2-story and basement, brick and frame store; comp. roof; owner builds.

Ga., LaGrange—Callaway Mills, care Fuller E. Callaway, Jr., let contract to Newman Lumber Co., LaGrange, for 3-group store

buildings containing 11 units; Ivey & Crook, Archt., Candler Bldg., Atlanta. 6-4

Ga., St. Simons Island—W. N. Gramling start work in few days on face brick store and office bldg.; 2 stories, 40x60 ft., conc. and brick foundation, flat built-up and tile roof, hardwood, pine and tile floors, marble thresholds, plaster board, tile work, ventilators; Arthur Wilson, Contr., Glynn Ave., Brunswick. See Want Section—Building Material and Equipment.

Ky., Graham—W. G. Duncan Coal Co., Greenville, let contract to Wallace Malone, Greenville, for \$15,000, one-story and basement, 35x85 ft., brick store addition; comp. roof, conc. and wood floors, steam heat; Joseph & Joseph, Archts.; Walter C. Wagner, Asso. Archt., both 406 Breslin Bldg., Louisville. 4-23

Miss., Lexington—Applebaum Brothers started work on rebuilding store previously burned at loss of \$25,000; N. P. Drennan, Contr.

Miss., Louisville—J. Gordon let contract to Arthur J. Pearson, both West Point, for \$10,000, one-story, 30x95 ft., conc., brick, tile and terra cotta store; comp. roof; F. Livingston, Archt., Louisville. 5-21

Mo., St. Louis—Stock & Son Realty Co., Harry Stock, 4726 Natural Bridge Ave., let contract to H. Kissells Sons, 4107 W. Florissant Ave., for 2-story and part basement, 22x60 ft., brick store, Natural Bridge and Marcus Aves.; Julius E. Tarling, Archt., 2806 N. Grand Blvd.

Mo., St. Louis—A. J. Koch, 5002 Thrush Ave., excavating for \$12,000, 2-story and basement, 22x65 ft., brick store and apartment, 5001 Thrush Ave.; comp. roof, hot air heat; A. Struebig, Archt., 3914 Alberta Ave.; J. Charles Mueller & Son, Contrs., 3528 Hebert St.

Tex., Amarillo—S. H. Kress & Co., 114 Fifth Ave., New York, let contract to C. S. Lambie & Co., Amarillo Bldg., Amarillo, for \$110,000 store. 4-30

Theatres

Ky., Glasgow—Bruce Aply, Roy Grinstead and Winn Davis, erect \$50,000, 2-story, 66x200 ft., brick, fireproof theater and store; L. W. Jones, Contr., Glasgow; E. W. Archer, 300 Coleman Bldg., Louisville.

N. C., Valdese—Mrs. Madeline Tice let contract at \$13,100 to Erwin & West, Statesville, for motion picture theatre; 2 stories, 40x98-ft. inside measurement, seat 550.

Va., Charlottesville—Following sub-contracts awarded on theater on Main St. for Paramount-Public Theaters Corp., Paramount Bldg., New York, Myer & Engel, 1901 First Ave., Birmingham, Ala., Southern representatives, for which D. J. Phipps, 212 Main St., Roanoke, has general contract: Lumber, Adams, Payne & Gleaves, Inc., Jefferson St., S.; toilet partitions, Sanymetal Products Co.; misc. and orna. iron, Roanoke Iron Works, Inc., 321 Third St., S. E.; struc. steel, Roanoke Iron Bridge Works, Walnut Ave., S. E.; hollow tile, Roanoke-Webster Brick Co., Inc., Boxley Bldg., all Roanoke; excavating, Hall & Mitchell; cement, Barnes Lumber Co.; fire brick, Charlottesville Lumber Co.; plumbing, Brown & Taylor, all Charlottesville; heating and ventilating, Poe Piping & Heating Co., 108 S. Main St., Greenville, S. C.; metal doors, Syracuse Fire Door Corp., Syracuse, N. Y.; common brick, Cherokee Brick Co., Commercial Bank Bldg., Raleigh, N. C.; metal windows, Voightman Metal Window Corp., Kalamazoo, Mich.; millwork, Miller Manufacturing Co., Inc., 600 Stockton St.; face brick, E. T. Mankin, Inc., 527 E. Main St.; rein. steel, Truscon Steel Co., Virginia Bank & Mortgage Bldg.; testing steel and cement, Froehling & Robertson, Inc., 814 W. Davey St., all Richmond; roofing and sheet metal, Flavin & Watson Co., Staunton; cast stone, Arnold Stone Co., Inc., 816 Warren St., Greensboro, N. C.; sleepers, Union Steel Products Co., Albion, Mich.; sand, J. C. Jones Sand Co., Inc., Park Ave., Norfolk; hardware, Sargent & Co., 94 Centre St., New York; gypsum roof slabs, Lathrop-Hoge Gypsum Construction Co., 1700 Sansom St., Philadelphia, Pa.; C. W. & Geo. L. Rapp, Archts., Paramount Bldg., New York and Chicago. 5-7

Warehouses

N. C., Goldsboro—Goldsboro Warehouse Co., erecting tobacco sales warehouse; \$30,000, one story, 256x202 ft., brick, wood floor, metal roof; E. F. Taylor, Contr., 306-7 Wayne Natl. Bank Bldg. 6-4

Cotton Leading Cash Crop

Practically 60 per cent of the cash income of farmers from agricultural products is derived from cotton, milk, hogs, cattle, calves, eggs and chickens, states the Bureau of Agricultural Economics, Department of Agriculture.

Cotton and milk vie for first place, the income from cotton lint and seed being estimated by the bureau at \$1,460,107,000 as an average for the five-year period 1925-29, or 14.59 per cent of the cash income from all farm commodities; the cash income from milk is estimated at \$1,453,646,000, or 14.52 per cent of the total. The five-year average total is computed at \$10,008,450,000.

Hogs, which use most of the corn crop, rank third in importance, the five-year average value being \$1,292,353,000, or 12.91 per cent of the total. Cattle and calves are next with \$1,006,142,000, or 10.05 per cent of the total, followed by eggs and chickens, and then wheat, which ranks sixth.

Corn, sold as grain, truck crops, tobacco, wool, sheep and lambs, miscellaneous fruits and nuts, hay, forest products, apples and oats range next in descending order of importance. No other individual product contributes as much as 1 per cent to the total cash income.

Horses and mules contribute nearly \$25,000,000 a year. Some persons might place potatoes high on the list, but actually the average cash income from potatoes for the five-year period was only 3.52 per cent of the total, or \$290,329,000. Hogs yielded more than cattle and calves combined, and tobacco only 2.61 per cent of the total, or \$261,489,000.

Atlantic Coastal Highway Officers

Norfolk, Va.—Closing its eleventh annual convention, the Atlantic Coastal Highway Association elected Col. Lee Goodwin, Emporia, Va., president to succeed Col. Joseph C. Stehlin, Jacksonville Beach, Fla., who declined reelection. D. D. Saunders, Elizabeth City, N. C., was elected secretary and Albert Sidney Johnson, Smithfield, Va., treasurer.

Rushing Major Pipe Lines

At a recent meeting of directors of the Columbia Gas and Electric Company, New York, it was announced that the company's new natural gas pipe line from Kentucky and West Virginia fields through Pennsylvania, Maryland and the District of Columbia, would be completed by October 1 and a natural gas pipe line from the Texas Panhandle to central Illinois would be completed by August 1.

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Crane.—Magras Machinery & Supply Co., 3131 Grand Ave., Dallas, Tex.—Wants prices and data on electric overhead traveling crane, about 27-6 span, 7 to 10-ton capacity.

Dump Cars.—J. R. Christian Co., 605 West Bldg., Houston, Tex.—Wants prices and data on 6 standard gauge, 2-way dump cars.

Electric Welders.—Greensboro Supply Co., Greensboro, N. C.—Wants 220-amp. and 300-amp. electric welding machines, portable type, gasoline engine driven; also by 3-phase, 60-cycle, 220-volt a. c. motors.

Feed Mill.—J. S. Wilson, Bailey, N. C.—Wants prices and data on feed mill for grinding corn, or both mill and small oil engine to operate same.

Log Cars.—Lewter F. Hobbs, Inc., McKevitt Bldg., Norfolk, Va.—Wants prices and data on about 50 log cars, standard gauge, A1 condition.

Paper Making Machinery.—W. M. Smith & Co. (Mchy. Dealers), Box 1709, Birmingham, Ala.—Wants prices and data on used machinery for making paper from pulp.

Textile Machinery and Specialties.—Greensboro Supply Co., Greensboro, N. C.—Wants to represent in South firms manufacturing machinery or specialties suited to requirements of cotton and rayon mills.

Veneer and Planing Mill Equipment.—Sparrow Lumber Co., Inc., H. G. Sparrow, Pres., Florence, S. C.—Wants prices and data on planer, engine, dry kiln, veneer machinery, trimmer, clipper, edger, band resaw.

F. G. Cole, Box 563, Newnan, Ga.—Wants prices and data on following:

- (1) **Boilers**—100 h. p., 125 lb. pressure, fire box, return tubular type; also same kind, 60 h. p.
- (2) **Extractor (Centrifugal)**—medium size, motor or belt driven.

Thomas H. Maxwell, U. S. Engr. Res., Woodbank Plantation, Route 1, Tuscaloosa, Ala.—Wants prices and data on following:

- (1) **Cornflake Manufacturing Machinery**—for production on large scale for wholesale market
- (2) **Hominy Canning Machinery**—large scale production
- (3) **Paper Manufacturing Machinery**—for making paper from corn stalks.

Miscellaneous

Gas Appliances.—S. M. Savage, Conslt. Engr., Panama City, Fla.—Wants prices and data on all kinds of gas appliances suitable for standard 530-B. T. U. gas, for household laundry, hotels, bakery, water heating, house heating, room heating, lighting, refrigerating, shops, industrial utilization.

Tank.—Master Petroleum Co., 500 Peach St., Waco, Tex., wants 20,000 gal. gasoline storage; second hand, also 1,000 bbl. bolted crude oil storage tanks.

Taploca Extracting Machinery.—E. Soriano, Mexican Consul, Albuquerque, New Mexico, U. S. A.—Wants prices and data on machines for extracting taploca from yuca or mandioca root.

W. M. Smith & Co. (Mchy. Dealer), Box 1709, Birmingham, Ala.—Want prices and data on following, used:

- (1) **Boiler Tubing**—10,000 to 30,000, 2½ in.
- (2) **Pipe**—1 to 5 carloads, 2 in.

Building Material and Equipment

Arthur Wilson, Glynn Ave., Brunswick, Ga., wants prices on following for 2-story, 40x60-ft. store and office bldg., St. Simons Island:

- Doors**—folding
- Flooring**—pine, hardwood, tile
- Hardware**
- Marble Thresholds**
- Plaster Board**
- Roofing**—built-up, tile
- Store Front**
- Tile**
- Ventilators.**

Hardwood Flooring.—Merritt & Anderson Bros. Co., Hawkinsville, Ga.—Wants data and prices on hardwood flooring in carload lots.

John W. Cowper Co., Inc., State Planters Bank Bldg., Richmond Va., bidding on Chesapeake & Potomac Telephone building, Charleston, W. Va., and wants prices and sub-bids by June 16.

Bids Asked

Air Compressor.—War Dept., U. S. Engineer Office, Huntington, W. Va.—Bids June 19 for single stage, vertical type, steam driven air compressor for derrick boat Captain Turtle; double action, 66 cu. ft. displacement, 100 strokes per minute, stroke not to exceed 12 in.; at delivery at 85 lbs. at 110 lbs. steam pressure.

Airway Lighting.—Chief Division of Purchases and Sales, Department of Commerce, Washington, D. C.—Bids June 15 on lighting facilities on Kingman-Winslow Section and Daggett-Kingman Section of Los Angeles-Amarillo Airway; 18 airway rotating beacons and one acetylene beacon between Kingman and Winslow, Ariz., and two rotating beacons on Daggett-Kingman section; includes twenty-one galvanized skeleton steel towers, about seventeen 10 by 14-ft. power and service sheds, fourteen 2¼-kw. engine generators, conc. center slab at towers, four miles power lines, 90,000 ft. No. 8 and No. 10 Duplex parkway cable and 300 boundary lights with day markers, etc. at fields and beacons; Proposal 23,350.

Airway Lighting.—Chief Division of Purchases and Sales, Department of Commerce, Washington, D. C.—Bids June 15 for lighting facilities, Site No. 57, Bowie Intermediate Field on Atlanta-New York Airway; includes rotating beacon with course lights, skeleton tower, 10x14-ft. service shed, conc. foundation, day markers; Proposal No. 23,365.

Ambulances.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 17 for six ambulances, delivery Philadelphia, Pa.; Sched. 1105.

Antitoxin.—Medical Section, Army Depot, Fort Sam Houston, San Antonio, Tex.—Bids June 19 for antitoxin.

Batteries.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 17 for 8000 dry batteries and 10,000 flashlight batteries, delivery Philadelphia, Pa.—Sched. No. 17-1932.

Basement (Concrete).—Office of Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids June 24 for rein. conc. basement at marine barracks, Quantico, Va.

Boiler Relocation, Vault.—Treasury Dept., Jas. A. Wetmore, Act. Supv. Archt., Washington, D. C.—Bids June 24 for furnishing labor and materials and performing work incident to relocating two boilers and for construction of vault in north court of U. S. Treasury.

Bolts.—U. S. Engr. Office, Huntington, W. Va.—Bids June 16 for bolts for repairs to wickets, U. S. Lock 27, Ohio River.

Bridge.—Mansfield, La. See Construction News—Bridges, Culverts and Viaducts

Cafeteria Equipment.—Treasury Dept., Office of Supv. Archt., Washington, D. C.—Bids June 17 for furnishing and installing cafeteria equipment, U. S. post office and courthouse (new), Dallas, Tex.

Castings.—War Dept., U. S. Engineer Office, Huntington, W. Va.—Bids June 17 for castings for Locks Nos. 7 and 8, Kanawha River; includes cast steel step gates, phosphorous bronze bushings, high carbon steel pintles; Cir. No. 31-243.

Clearing.—Bd. of Commrs., Fifth Louisiana Levee Dist., Richard K. Boney, Sec., Tallulah, La.—Bids July 6 at office of Bd. of State Engrs., Baton Rouge, La., for Cottage-Kempe Clearing, Tensas Parish; includes clearing right-of-way for land side borrow pits between Sta. 2695 and 2814; approx. length 11,900 ft., width 300 ft.

Chlorine.—Purchasing and Contracting Officer, Q. M. Corps, Langley Field, Hampton, Va.—Bids July 1 for 6000 lb. liquid chlorine.

Derrick Barge.—War Dept., U. S. Engineer Office, Florida Theatre Bldg., Jacksonville, Fla.—Bids June 22 for U. S. Derrick Barge No. 13; overall length 110 ft.; molded beam 32 ft. 2 in.; molded depth amidships 10 ft. 2 in., draft, forward and aft, 4 ft., 372 tons displacement; wood hull; one vertical donkey type, 48-in. boiler; main hoisting engine, three drums, two cylinder, 9-in. diam. each, 10-in. stroke.

Dikes.—U. S. Engr. Office, McCall Bldg., Memphis, Tenn.—Bids June 19 for 37,700 lin. ft. permeable pile dikes at various localities.

Dikes.—U. S. Engr. Office, 707 Postal Telegraph Bldg., Kansas City, Mo.—Bids June 19 for 2770 lin. ft. standard pile clump and about 200 lin. ft. standard crib dikes, Missouri River, Marion Bend, 2 mi. downstream from Marion, Mo.

Diving Telephone.—U. S. Engr. Office, Huntington, W. Va.—Bids June 12 for diving telephone for Kanawha River.

Drainage.—U. S. Engr. Office, Norfolk, Va.—Bids June 30 for removing about 59,585 cu. yd. material in maintenance dredging in James River at Richmond, Va.

Drainage Diversion.—Bd. of State Engineers, D. C. Daniel, Sec., Baton Rouge.—Bids July 6 for Lake St. Peter Drainage Division, Tensas Parish, about five miles below St. Joseph, approx. length 14,000 ft., contents 275,000 cu. yds.

Dredging.—U. S. Engr. Office, Galveston, Tex.—Bids June 24 for dredging Cedar Bayou Channel, Tex.

Drills, etc.—Office of Ch. of Engrs., U. S. Army, Washington, D. C.—Bids June 16 for rock drills, rock drill mountings, double screw columns, 50-ft. lengths air hose, drill steels, blacksmiths' tools, air line lubricators, manifolds, air compressor outfit, portable band saw, circular saw, wood-boring machine, digger, air hoist.

Elevator.—Supt., St. Elizabeth's Hospital, Washington, D. C.—Bids June 15 for passenger elevator, electric, to be installed in R Building, 2 stories and basement, also enclosures, doors, frame and trim for 3 floors.

Electrical Supplies.—Marine Corps, Quartermaster's Dept., Washington, D. C.—Bids June 15 for electrical supplies under schedule 1103; includes fuses, rubber-covered, copper wire; conductors, racks, reflectors, cabinets, conductors, plugs, sockets, transformers, meters.

Floodlight.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 16 for furnishing floodlight to Naval powder factory, Indian Head, Md.

Fire Pump and Oil Engine.—City of Leland, Miss., Mary P. Johnson, Clerk.—Bids June 30 for oil burning engine of approximately 600 h. p. and one 1000-gal., 100-lb. pressure fire pump with dual drive.

Floor-Brush Handles.—Marine Corps, Quartermaster's Dept., Washington, D. C.—Bids June 17 for 2000 floor-brush handles.

Galvanized Wire Fabric.—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids June 18 for approx. 90,000 squares, 100 sq. ft. each, galv. wire fabric, suitable for special conc. reinforcing

Gas.—Medical Section, Eighth Corps Area Gen. Depot, Ft. Sam Houston, San Antonio, Tex.—Bids June 20 for refilling cylinders with nitrous oxide gas, carbon dioxide gas, and oxygen gas during fiscal year 1932.

Gasoline.—U. S. Property and Disbursing Officer, Militia Bureau, Little Rock, Ark.—Bids June 15 for 46,000 gal. aviation gasoline.

Gasoline, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 15 for gasoline, etc., delivery Annapolis, Md., Philadelphia, Pa., Washington, D. C., Quantico, Va., and Parris Island (Port Royal), N. C.

Grading.—Washington, D. C. See Construction News—Roads, Streets and Paving.

Grease Press.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 17 for one 40-ton hydraulic grease press, delivery Quantico, Va.; Sched. 1107.

Gun Emplacements.—Office of Corps Area Engr., 311 St. Paul Pl., Baltimore, Md.—Bids June 19 for constructing 4 155 MM gun emplacements, Fort Story, Va.

Heating System Repairs.—Office of Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids June 24 for alterations to heating plant and heating systems in buildings at Naval Academy (radio station), Annapolis, Md., including new oil burning, pumping and heating equipment; steam and oil water heaters, 8000-gal. fuel oil storage tanks, motor driven vacuum pump, power distributing panel, cables wires and conduits, piping systems and accessories for equipment.

Lacquer, Thinner, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 15 for lacquer, thinner, etc., delivery Quantico, Va.

Lathes.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 16 for motor driven precision bench lathes and spare parts, and for motor driven geared head screw cutting lathe and electrical spare parts.

Levee Repair and Enlargement.—Bd. of Commrs., Tensas Basin Levee Dist., J. H. Hart, Sec., Delhi, La.—Bids June 19 at office of Southeast Arkansas Levee Bd., Arkansas City, Ark., for O'Possum Fork Repair and Enlargement; includes cutting out and refilling slide and placing river side enlargement; length of line 600 ft., crown 10 ft., approx. contents 30,000 cu. yds.

Lumber.—U. S. Engr. Office, P. O. Box 1017, Memphis, Tenn.—Bids June 15 for 750,000 ft. b. m. mattress lumber.

Lumber.—Commanding Officer, Charleston Ordnance Depot, S. C.—Bids June 15 for lumber.

Meat Slicing Machine.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 15 for meat slicing machine, delivery Parris Island (Port Royal), S. C.

Miscellaneous.—Office of Gen. Pur. Officer, Panama Canal, Washington, D. C.—Bids June 18 for following, Sch. 2660:

Marine gasoline engines, roofing tile, spring steel, seamless brass pipe, brass tubing, insulated cable, wire rope, insulated wire, rheostats, knife switches, lavatories, artesian-well cylinder and rods, relief valves, grease cups, etc.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids June 25 for following, Sch. 2661:

Dynamite, detonators, electric water coolers, power lawn mower, drill steels, axles, cast-iron pipe-fittings, office paste, unsensitized blue print paper, Southern yellow pine lumber and creosoted Southern yellow pine or Douglas fir timbers.

Miscellaneous.—Panama Canal, Office of General Purchasing Officer, Washington, D. C.—Bids June 26 on metal roofing, wire rope, pipe and fittings, copper tubing, electric motors, blowers, rectifiers, electrical attachments, stocks and dies, twist drills, miter boxes, cotton line, sheet insulation, etc.; Sched. 2662.

Miscellaneous.—Panama Canal, Office of General Purchasing Officer, Washington, D. C.—Bids June 23 on white vitreous ware water closets and lavatories, cast iron slop sinks, steel chains, electric welding rods, metal-cutting band saws, horse and mule shoes, gas hose, white writing paper for addressograph machine.

Moulder, Mortiser and Sandpapering Machine.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 16 for four side moulder, hollow chisel mortiser and single drum sandpapering machine, all motor driven.

Packing, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 15 for packing, etc., delivery Quantico, Va.

Paints.—Quartermaster, Marine Corps, Washington, D. C.—Bids June 15 for lacquer, wood sealer, undercoater, thinner, stain, etc.

Pattern and Woodworking Shop Machinery and Equipment.—Commrs., District of Columbia, Washington, D. C.—Bids June 15 for furnishing and installing certain machinery and equipment in pattern and woodworking shop at D. C. reformatory, Lorton, Va.

Paving Blocks.—Commrs., District of Columbia, Washington, D. C.—Bids July 1 for vitrified paving blocks, as required during fiscal year 1932.

Pile Clump Dikes.—War Dept., U. S. Engineer Office, Postal Telegraph Bldg., Kansas City, Mo.—Bids June 20 for 4440 lin. ft. standard pile clump dikes, Missouri River at Plow Boy Bend.

Pipe.—U. S. Engr. Office, Vicksburg, Miss.—Bids June 16 for 20 30-ft. sections 16 in. i. d. flange steel welded dredging pipe.

Pipe.—U. S. Engr. Office, P. O. Box 45, Jacksonville, Fla.—Bids June 18 for riveted steel shore discharge pipe.

Piling.—U. S. Engr. Office, Memphis, Tenn.—Bids June 24 for piling.

Plumbing Supplies.—Quartermaster, Marine Corps, Washington, D. C.—Bids June 15 for 150 lb. furnace cement, 50 qt. boiler compound, 16 drain boards, 10 boilers, 4 galvanized tanks, 32-gal. capacity, 2550 ft. welded steel pipe, 6200 ft. same, 30 check valves, approx. 200 gate valves and 150 globe valves.

Plumbing Supplies.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 15 for plumbing supplies, delivery Quantico, Va.

Plumbing Systems, Fire Escapes, etc.—Bd. of Awards, Office of City Register, City Hall, Baltimore Md.—Bids June 17 for alterations to steam heating plant and installing modern plumbing system, School 54; for millwork, etc., building site, School 54; plumbing system, School 13, and for furnishing and erecting 2 struct. steel fire escapes on S. E. elevation of School No. 221, all for Dept. of Education.

Plumbing and Heating.—Treasury Dept., Office of Supvy. Archt., Washington, D. C.—Bids June 29 for plumbing and heating changing at U. S. post office, Jellico, Tenn.

Pumps.—Bureau of Standards, Department of Commerce, Washington, D. C.—Bids June 12 on two large vertical pumps of 50 second-feet and 80 second-feet capacity, respectively, and four double suction centrifugal pumps ranging from 5 to 20 second-feet capacity; plans from H. N. Eaton, Room 4, West Bldg., Bureau of Standards.

Radiator Covers.—Property Officer, Army War College, Washington, D. C.—Bids June 23 for furnishing and installing 65 radiator covers.

Radio Tower.—Office of Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids June 24 for dismantling 300-ft. radio tower and providing new 300-ft. steel radio tower at Navy Yard (radio station), Charleston, S. C.

Riprap Stone.—U. S. Engr. Office, McCall Bldg., Memphis, Tenn.—Bids June 16 for 40,000 cu. yd. riprap stone.

Roads, Sidewalks, Water Lines, Sewer Lines, etc.—Fort George G. Meade, Md. See Construction News—Roads, Streets and Paving.

Road.—War Dept., Q. M. Dept., Washington, D. C.—Bids June 22 for conc. base course with curbs, gutters and catch basins on new roadway between Grant Circle and Memorial Amphitheatre in Arlington National Cemetery, Fort Myer, Va.

Searchlight.—U. S. Engr. Office, P. O. Box 45, Jacksonville, Fla.—Bids June 16 for pilot house controlled searchlight.

Screening and Weatherstripping.—Office of Constructing Quartermaster, Fort George G. Meade, Md.—Bids June 30 for furnishing and installing insect screens on doors and windows for weatherstripping exterior doors of 1 nurses' quarters, 3 field officers' quarters, 9 company officers' quarters, 9 company officers' quarters and 8 non-commissioned officers' quarters, Ft. Geo. G. Meade.

Sewer.—Town, Ralph A. Townsend, Clk., Easton, Md.—Bids June 17 for constructing about 1000 ft. terra cotta pipe storm drain, 15 to 20 in. manholes, catch basins and connections; E. G. Kastenhuber, Jr., Town Engr.

Steam Distributing System.—Office Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids June 24 for providing and installing outside steam distributing system, run in tunnels, in cast-iron conduit, on pole lines, and in unexcavated portion of building at marine barracks, Quantico, Va.

Steel Wire.—U. S. Engr. Office, 1006 McCall Bldg., Memphis, Tenn.—Bids June 17 for 1,500,000 lb. galv. steel strand.

Test Bench.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 23 for electrical test bench.

Textile Machinery.—Commrs., District of Columbia, Washington, D. C.—Bids June 17 for furnishing and installing certain machinery and equipment in hosiery and underwear plant, D. C. reformatory, Lorton, Va.

Thread Gages.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 16 for thread gages.

Trucks.—Commrs., District of Columbia, Washington, D. C.—Bids June 15 for 2 motor trucks, 3000-lb. pay load, depart. of vehicles and traffic.

Water Pumping and Distributing System.—District Commrs., Room 509, District Bldg., Washington, D. C.—Bids June 17 for drilling well and furnishing distribution system at District Training School, near Laurel, Md.

Wreck Removal.—War Dept., U. S. Engineer Office, Florida Theatre Bldg., Jacksonville, Fla.—Bids June 23 for removing wreck of Yacht Honey-dew from Ft. George River, near Mayport, Fla.

Trade Literature

Cold Rolled Strip Steel.—The American Steel & Wire Company, Chicago, subsidiary of the United States Steel Corporation, has issued a booklet devoted to Cold Rolled Strip Steel. By illustrations it shows some of the manifold uses of the product. According to the publication, the history of this product in America covers a period of nearly 75 years, and where hundreds of products were made from it a few years ago, "thousands are made today." Its inception is said to be traceable to what is now the North Works of the American Steel & Wire Company at Worcester, Mass.

Natural Gas Engines.—The Charter Gas Engine Co., Sterling, Ill., recently issued Educational Bulletin No. 23 featuring "Natural Gas Engine Power." The bulletin points out that through availability of natural gas at low industrial rates along the extensive gas distributing systems in the South and Middle West, one of the cheapest fuels for power purposes is made available for use by simple gas engines. Figures are presented to show the vast supply of natural gas, and the advantages of the product as a fuel are set forth.

Virginia.—The Norfolk and Western Railway Company, Roanoke, Va., has issued an invitation to vacationists to come to Virginia, in the form of an attractively illustrated booklet devoted to the state's natural beauties, climatic advantages and recreational facilities. The publication, "Virginia—The Land of Romance, Hospitality and Beauty," describes in detail various sections and resorts.

Piping and Valves.—The Semet-Solvay Engineering Corporation, New York, has issued bulletin No. 44 devoted to Semet-Solvay piping and valves, an important adjunct of the publication being a comprehensive and conveniently arranged subject index. This corporation, a pioneer in the manufacture of piping and valves, has developed its manufacturing methods to permit wide flexibility in meeting exacting specifications.

Pulverized Coal Burner.—The Fuller Lehigh Company, New York, a division of the Babcock & Wilcox Company, has issued bulletin No. 905, "Fuller Lehigh Circular Burner." The publication describes the application, construction and operation of a pulverized coal burner of the turbulent type.

INDUSTRIAL NEWS

Arc Welding.—A new publication, "Westinghouse Arc Welding Data Bulletin No. 15," has been issued by the Westinghouse Electric and Manufacturing Company. The bulletin illustrates and describes a number of unusual arc welding achievements and explains methods of obtaining good welds.

Custom Built Roofs.—The Weatherproof Products Company, Memphis, Tenn., is distributing a booklet, "Custom Built Roofs," illustrating and describing Weatherproof "fire resisting" insulated rigid shingles, a product of the company in which insulation is built in each shingle under a patented process.

Chesapeake and Ohio Magazine.—The June issue of the Chesapeake and Ohio Lines Magazine, published at Richmond, Va., contains a number of articles of special and general railroad interest, including a discussion of the All-Expense Historyland Tours to Washington and Colonial Virginia. These seven-day tours to be operated during the summer are said to have captured the fancy of vacationists.

Bending Machines.—The Wallace Supplies Manufacturing Co., Chicago, Ill., is distributing Bulletin No. 27 illustrating and describing Wallace bending machines and other equipment. The front page of the publication shows the Wallace Universal Bender No. 43, adaptable to the cold bending of pipes, tubes, conduits, heavy wires, angles, channels, tees, flat materials, special sections and reinforcing bars.

White Gold.—The American Steel & Wire Company of New Jersey, Chicago, Ill., has issued a booklet, "White Gold," presenting the story of the Hoover Dam now under construction near Boulder City, Nev., at a cost of many millions of dollars. This project is being built by the Government for irrigation and power purposes and its completion will mark one of the greatest engineering and construction achievements of the century.

Cigarette Tobacco.—"The Plight of Cigarette Tobacco," a 90-page volume issued in the Social Study Series of the University of North Carolina, Chapel Hill, was written by T. J. Woofert, Jr., Institute for Research in Social Science, University of North Carolina, and is a study of conditions affecting the farmer in marketing leaf tobacco. It analyzes factors which determine the price paid to farmers, with special reference to "the significance of these factors to a co-operative marketing program." The volume is priced at \$1.00.

Norfolk and Western Appointments

G. F. Butler, freight traffic manager of the Norfolk and Western Railway Company, has been appointed general traffic manager and E. S. Moore, general superintendent of transportation, has been appointed coal traffic manager. Oscar W. Cox, general freight agent, has been promoted to freight traffic manager, succeeding Mr. Butler, while F. H. Pitman, assistant general freight agent, will succeed Mr. Cox as general freight agent. K. V. Conrad and E. J. Tice, chief clerk to the general superintendent and superintendent of transportation, respectively, have been made assistant superintendents of transportation.

T-Tri-Lok Floor Construction

The Carnegie Steel Company, Pittsburgh, Pa., has acquired from the Tri-Lok Company the rights to manufacture and distribute T-Tri-Lok, a floor construction involving the use of tees in which interlocking members in the form of flat bars are forced into place under heavy pressure. This construction is described as economical and efficient and is suitable for bridge and building floors, railroad crossings and similar uses where self-contained floor slabs are required to support heavy loads. It is manufactured and shipped in panels which may be readily anchored to stringers, and with T members in contact, no form work is required to retain concrete fill.

Railway Appointments

W. L. Nichol, Nashville, Tenn., general freight agent of the Nashville, Chattanooga & St. Louis Railway, announces the appointment of A. D. Carter, freight traffic agent, with offices at Chattanooga, Tenn., succeeding C. R. Fryar, resigned. L. A. Heatherman has been appointed freight traffic agent, with offices at 1913 Transportation Building, 225 Broadway, New York, vice A. D. Carter, transferred.

Insulating Firebrick

The Babcock & Wilcox Company, New York, announces a new insulating firebrick for furnace work, known as B. & W. No. 80 Insulating Firebrick. Practical methods for making it in brick sizes have only recently been developed, the company having installed necessary equipment for producing it on a commercial scale. When used as linings for intermittent furnaces, the brick is said to effect a great saving during heating up periods. It is suitable for lining oil and gas fired furnaces, electric furnaces of the resistance type and for coal-fired equipment wherever it may be used in protected wall areas not exposed to mechanical abrasion and slag action. The bricks are easily handled and may be cut, drilled or shaped with ordinary working tools.

Southwest Foreign Trade Meeting

Possibilities in the export and import branches of business will be discussed at the third annual meeting of the Southwest Foreign Trade Conference, at Oklahoma City, June 24 and 25, for which large attendance is indicated. The Conference acts as a clearinghouse through which foreign trade interests in that area may handle their problems and also exerts constructive influence in promotion of foreign trade. Among the speak-

To Test New Ship

The new Dollar liner "President Hoover," under construction with her sister ship, the "President Coolidge," in the yard of the Newport News Shipbuilding Company, Newport News, Va., will undergo her first sea trial, June 16. The trials are to continue for three or four days, and engineers of the shipbuilding company and the line are understood to be especially interested in the performance of the turbine-electric propulsion equipment as furnished by the General Electric Company.

Locomotive Order for Westinghouse

An order has been placed with the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., by the National Gypsum Company, Buffalo, N. Y., for a standard 8-ton trolley type electric locomotive, equipped with two 40-horsepower motors operating from a 250-volt trolley, and of the single end type. Dynamic braking, drum control equipment and type M edge-wound resistors are other features of the specifications. This order follows a contract recently closed by the National Gypsum Company with the Westinghouse organization for electric line and substation equipment.

ers expected are William L. Cooper, director of the Bureau of Foreign and Domestic Commerce; Dr. Julius Klein, Assistant Secretary of Commerce, and Senator Dwight W. Morrow, formerly Ambassador to Mexico.

New Paving Material Plant

A new paving material plant under construction at Sparrows Point, near Baltimore, on the property of the Bethlehem Steel Company, has practically been completed by the Interstate Amiesite Co., Inc., Wilmington, Del. This plant, said to contain several novel features not found in other Amiesite plants, is designed for the manufacture of Interaco stone tread, Amiesite and other cold-lay asphaltic compositions, using prepared blast furnace slag as an aggregate. It is designed for a capacity of 900 tons daily, although plans are now being considered for increasing this capacity. The plant is owned and operated by the Interstate Amiesite Co., Inc., and is being built by company forces. All equipment is especially designed and made according to the company's specifications.

W. H. Tunncliffe, Sanford, Fla., is reported interested in a new company which plans to equip a canning factory at Sanford at a cost of \$80,000, employing 250 people during the season and using 1000 boxes of oranges daily.

The Wage Scale

Under the caption, "War and Wages," the Financial Chronicle comments as follows on discussions of the subject by the International Chamber of Commerce:

"The question of the scale of wages has now reached the acute stage; with allowance for altered conditions, it affects the whole world.

"Why should wages alone, in a 'changing world,' remain upon a war basis? For ourselves, we have repeatedly essayed to show that 'consumption' cannot be upheld by the 'high wages' of unionized technical labor. All other labor must help pay the bill. It is not proven that the high wages of union labor does maintain a high rate of consumption, save perhaps for luxuries. Savings banks deposits, increasing despite depression, demonstrate this truth. Shall wages continue 'high' with everything else low? If war raises wages, ought not peace to lower them? There are complications. The tariff is one. It is shouted from the housetops that while tariffs are high, wages will and must remain high. To lower tariffs, would lower nominal wages, though real wages might not be affected; therefore, it must not be done. Consumption power must be kept up, or depression will be worse depressed. But how long shall a limited number, enjoying undiminished wages, pile up savings in the banks, while the many find it hard to live?

"Everyone must deprecate arbitrary wholesale horizontal reductions. However, in 'real' wages, other things being equal, low levels may be as good as high levels. But 'arbitrary' means prove the difficulty. Arbitrary powers, the power of organized coercion, now undoubtedly keep wages in some industries at war levels." * * *

"That the world is out of joint is true. European countries show, it seems, that wages fixed by governments do not contribute to the general welfare. There is no relief for us in this impasse. Yet unless 'labor' (it has done so in some instances) voluntarily accepts reductions in keeping with price and profits levels, we shall not reach the smooth ways without disorder and destruction.

"Natural laws wait for no man, no government. If wages, part of costs, a large part, cannot follow the general trend of conditions, a people is powerless to save itself. In every other factor of life and living, economic law prevails. There is overproduction in agriculture and manufactures. There always will be while the machine multiplies and the variable tastes of the citizens continue. 'Plain living' is a protection. But who will practice it? How many, and in what ways? Shall wages alone remain unaffected? It is contrary to reason. It is in many instances contrary to facts—that have been sternly applied. High wages, in low times, not only add to distress—they increase unemployment, and they fail to increase general consuming power. It is time to admit this fallacy of keeping up consumption to keep up prosperity!

"Shorter days and shorter weeks for everybody are only a subterfuge to keep up the nominal wages of organized labor. It is a scheme to substitute coercion for natural law. When there is less work to do and more unemployed men to do it,

the worker must bow to the inevitable. Conferences promulgating fallacious economics are of no avail to the hungry man. Politics afraid of the 'labor vote' is a poor mentor for the alleviation of 'hard times.' How much harm has been done by this 'policy' of high wages to keep up consumption to keep up prosperity, it is not easy to estimate. We may be at the bottom of the trough or we may not—but only wages for such work at such rates as will give us life and renewed energy will lift us out. The 'principle' (?) is not a demonstrated failure. To continue harping on it will only prolong the evil day. But when every man works, as he can, for what he can, production renews and accelerates, and with this natural increase the times grow better and wages again rise."

To Erect Sulphur Plant

New Orleans, La.—The Jefferson Lake Oil Co., headed by Arthur Barba, plans to erect a plant of about 2000 horsepower capacity for the production of sulphur from its Lake Peigneur deposit. As soon as the company's engineers have completed the design, specifications will be submitted to various firms for equipment prices. Should the sulphur deposit partially outlined prove to be typical of others, additional units will be added from time to time.

Officers for \$17,500,000 Textile Enterprise

Gastonia, N. C.—Albert G. Myers has been elected president of Textiles, Inc., a new company recently organized here with an authorized capital stock of \$17,500,000 to consolidate 14 textile mills in Gastonia and other sections and to purchase six other mills. J. H. Separk was elected president of Textiles, Inc., Sales Co., subsidiary selling agent for Textiles, Inc. Other officers of the two companies were elected as follows: Textiles, Inc.—J. H. Separk first vice-president; C. C. Armstrong and J. L. Gray, vice-presidents; R. G. Rankin, secretary-treasurer. Textiles, Inc., Sales Co.—A. G. Myers first vice-president; C. C. Armstrong and J. L. Gray, vice-presidents; A. K. Winget, secretary-treasurer. The selling company, to be owned entirely by the parent company, will be capitalized at \$500,000. Sales offices will be maintained in Philadelphia, New York, Boston, Chicago, Chattanooga, St. Louis and other cities, with headquarters in Gastonia. An official announcement states that Textiles, Inc., is equipped to manufacture all counts of combed and carded yarns required by the mercerizing, weaving and thread trades, with plans to add necessary mills to mercerize completely and finish the entire output of the company's mills.

\$6,500,000 CONGRESSIONAL LIBRARY ANNEX

Plans Ready in July for Big Government Project

Washington, D. C.—Plans will be ready in July for a new \$6,500,000 annex for the Congressional Library here, according to David Lynn, Architect of the Capitol, who has the project in charge. Preliminary plans contemplate a structure five floors above cellar, 400 by 225 feet, the top floor to be set back about 35 feet from the outer walls. On all four sides, to a depth of 35 feet, rooms will be provided for the accommodation of different library activities. The central portion, 322 by 147 feet, will be filled with book stacks.

The addition to the central portion of the Library Building will provide, in the basement, a shipping and packing room, more space for the mail division, garage and terminal room from which book carriers will connect with the annex building and the Supreme Court Building. The second floor level will provide for a treasure room, which will contain storage facilities for 150,000 volumes, in addition to a large reading room and exhibit space. In this room also will be stored all rare books now in the collections and provision will be made to insure their preservation by a suitable air conditioning system. Pierson & Wilson are the architects, and A. B. Strowbridge, consulting architect, both of Washington.

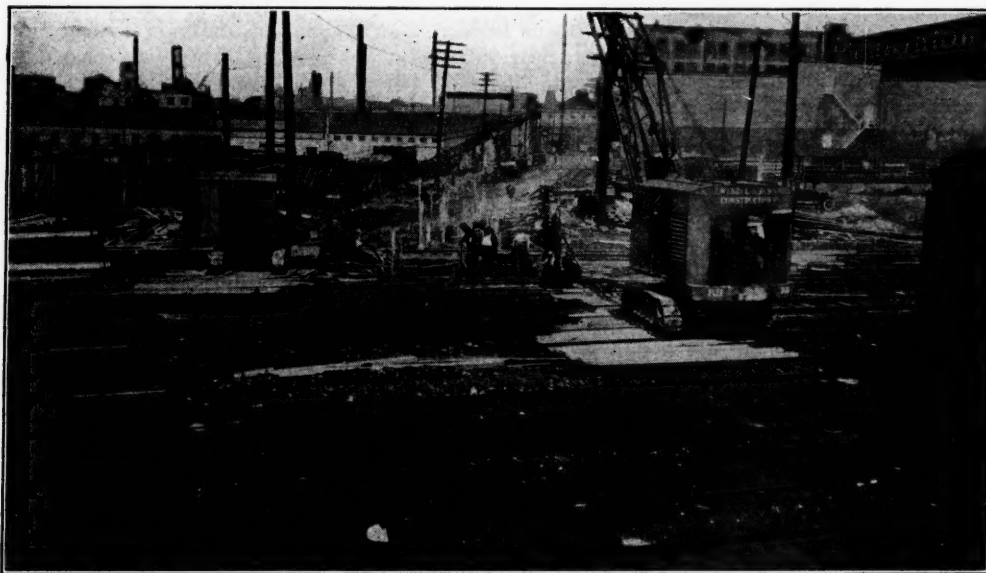
Completed in 1897, the Library of Congress provided bookstacks for the storage of approximately 2,500,000 books. By 1910, these stacks were filled and additional bookstacks erected in the southeast courtyard. A further addition of bookstacks was erected in 1927 in the northeast courtyard. During this period the collection of books alone had increased from 900,000 to over 3,500,000 volumes, and now has passed the 4,000,000 mark. Only a small amount of shelving remains available. Dr. Herbert Putnam is the director of the library.

Heads Barge Line Division

Washington, D. C.—Secretary of War Patrick J. Hurley announces the promotion of Glenn E. Taylor, formerly district superintendent of terminals of the Federal Barge Lines, to operating manager of the Warrior Division of the Federal Barge Lines. This division is that part of the Inland Waterways Corporation's Federal Barge Line, which runs from New Orleans, across the sound to Mobile and thence to Birmingham, Ala., which is connected with Birmingham by the corporation's railroad line.

LEADITE

Water Works Men Specify and Use LEADITE with "Confidence"



Laying 30-in. cast iron bell and spigot pipe with LEADITE JOINTS under 42 R.R. Tracks.
5 foot cover base of rail, and pipe unprotected.

CONFIDENCE,—a word often used, and probably more often "abused."

THE DICTIONARY DEFINES CONFIDENCE AS—

Assurance of mind, or firm belief in the good-will, integrity, stability, or veracity of another, etc.

Water Works Men have had the CONFIDENCE to Specify and Use LEADITE

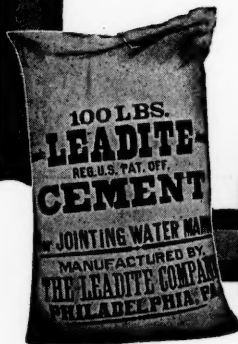
for thousands of miles of cast iron bell and spigot water mains of various sizes.

CONFIDENCE, as we see it, can ONLY EXIST as the result of a QUALITY PRODUCT, plus a SERVICE WELL RENDERED, plus FAIR DEALING over a period of years.

We naturally like to believe that the widespread usage of LEADITE throughout the Country, is based upon CONFIDENCE,—at least, we try to make it so.

*The pioneer self-caulking material for c. i. pipe.
Tested and used for over 30 years.
Saves at least 75%.*

THE LEADITE COMPANY
Land Title Building - - Philadelphia, Pa.



No Caulking



Opens School of Aeronautics

Atlanta, Ga.—A new building to house the Daniel Guggenheim School of Aeronautics was recently completed by the Georgia School of Technology here and considerable progress has been made in connection with the physical equipment for the department. The new school, one of seven similarly named schools sponsored by the Daniel Guggenheim Foundation for the Promotion of Aeronautics, was erected from a fund of \$300,000 given the Georgia School of Technology in March, 1930. In addition to class rooms, the new building contains a large drafting room, library, seminar room, instrument laboratory, model and machine shop, exhibit hall, several small research rooms and two wind tunnels. The larger of the tunnels provides for an air jet 9 feet in diameter and 12 feet long, in which the air moves smoothly at a speed in excess of 100 miles per hour. It will be used for research work. The smaller tunnel, to be built of the same general form as the larger, will supply an air jet 2½ feet square and about 3 feet long, with a slower speed. This will be used primarily for student instruction, but additional instruments and special research equipment will be added from time to time. The work of the school will cover both the training of students in various phases of aeronautical engineering and research work on aeronautical problems.

Real Estate Boards Elect Officers

At the twenty-fourth annual convention in Baltimore, the National Association of Real Estate Boards elected L. T. Stevenson of the Stevenson-Williams Company, Pittsburgh, Pa., president for the ensuing year. The following were elected to serve as vice-presidents: William H. Gardner, Winnipeg, Manitoba, Canada; James B. Fisher, Brooklyn, N. Y.; August C. Sehrt, Milwaukee, Wis.; John J. Wagner, Cedar Rapids, Iowa, and Charles Elmer Rousek, East Orange, N. J.

Distribution of Naval Stores

Jacksonville, Fla. — The Columbia Naval Stores Co. of this city has signed a contract to handle the distribution of the products of the Gum Turpentine-Rosin Marketing Association, according to T. J. Aycock, chairman of the board of the latter organization, which is said to handle about 70 per cent of the country's output of naval stores. Mr. Aycock also announces contracts with the Downing Co., Inc., and the West Florida Naval Stores Co., whereby producers of these organizations will market their

products through the Gum Turpentine-Rosin Marketing Association. By the terms of the contract with the Columbia company, that organization, which has connections in all parts of the world, ceases to become a buyer of gum and rosin and will devote all its facilities to the distribution of production controlled by the Association.

Bauxite in Arkansas

Manifold increase in America's active source of aluminum is considered a possibility through a survey of the bauxite fields in Arkansas, one in Pulaski county, near Little Rock, and another in Saline county, near Benton. These two areas contribute about 97 per cent of the bauxite produced in the United States.

Recent findings are said to indicate that these Arkansas areas form a production base of about 165 square miles, with ore resources much greater than all other known deposits combined. Bauxite consumption in the United States runs to about 750,000 tons a year, of which 365,000 tons are produced in this country.

Rice Millers Elect

New Orleans, La.—At the recent convention here of the Rice Millers Association of Louisiana, Texas and Arkansas, William H. Loving, Bay City, Tex., was elected president for the ensuing year to succeed J. H. Trotter, Lake Charles, La. Felix Jumonville, Baton Rouge, La., and Adolph Pfeffer, Houston, Tex., were elected vice-presidents. Beaumont was selected for the 1932 convention.

\$400,000 Postoffice Plans

High Point, N. C.—Two local architects—Eccles D. Everhart and Louis F. Voorhees—and James M. Workman, engineer of Greensboro, N. C., have been commissioned by the Treasury Department, Jas. A. Wetmore, Acting Supervising Architect, to prepare plans and specifications for the new \$400,000 post office here. A. B. Boynton, High Point, is the mechanical engineer.

Bids on University Buildings

Baton Rouge, La.—Bids will be opened July 21 instead of June 16, as previously announced, for construction of a Fine Arts building to house the school of music and speech and a new field house and recreation center, both for the Louisiana State University here. Weiss, Dreyfous & Seifert, Inc., New Orleans, are the architects.

\$1,600,000 Houston Improvements

Houston, Tex.—Public improvements to cost more than \$1,600,000 are expected to be launched by this city within the next two months, the greater part of the program to involve street paving. A major project will be the construction of a \$500,000 sanitary trunk line sewer 6 miles long and five feet in diameter to the site of a proposed sewage treatment plant on Simms Bayou. Engineers estimate that the first units of the proposed treatment plant will cost \$1,000,000, and it is understood that an election will be held this year on bonds to finance the project. Another important project will be the improvement of Telephone Road to involve the construction of sewers in the thoroughfare to cost \$130,000 and paving to cost \$165,000. A new bridge on this road is already under construction.

Bridge Engineer M-K-T Lines

St. Louis, Mo.—The appointment of S. M. Smith as bridge engineer of the Missouri-Kansas-Texas Lines, with headquarters at 1528 Railway Exchange Building, St. Louis, has been announced by F. Ringer, chief engineer of the railroad. Mr. Smith succeeds R. M. Stubbs, deceased, and will have charge of the completion of the Katy's new \$1,200,000 bridge across the Missouri River at Booneville, Mo., and other bridge and structural work on the company's lines. A graduate of the Armour School of Technology, Mr. Smith has served the Wabash Railway for several years as assistant bridge engineer.

\$46,000,000 Power Project

Hardin, Ky.—The Federal Power Commission, Washington, has issued a preliminary permit to the Southern Industries and Utilities, Inc., W. G. Waldo, president, Washington, for a hydro-electric power project on the lower Tennessee River in Kentucky near Hardin. This development will be known as the Aurora dam project and is estimated to produce 94,000 primary horsepower. With navigation facilities, the project is expected to cost about \$46,000,000.

\$5,000,000 Road Bonds Offered

Jefferson City, Mo.—Bids will be opened July 8 by the State Board of Fund Commissioners for the purchase of \$5,000,000 highway bonds to bear an interest rate of 3½ per cent. The bonds are a part of a \$75,000,000 authorization.

Snead Architectural Iron Works
STRUCTURAL STEEL
ORNAMENTAL IRON
 LOUISVILLE, KY.


CAROLINA STEEL & IRON COMPANY
 GREENSBORO, N. C.

Sales Office:—709 Nissen Bldg., WINSTON-SALEM, N. C.
Structural Steel FOR Buildings and Bridges
 Capacity 1000 Tons per Month. 3000 Tons in Stock
 The Largest Steel Fabricators in the Carolinas

HEAVY STEEL PLATE
FABRICATION
 OF EVERY DESCRIPTION
 LET US QUOTE ON YOUR STANDARD OR SPECIAL WORK
TRAYLOR ENGINEERING & MANUFACTURING CO.
 ALLENTOWN, PENNSYLVANIA

GUNITE METHOD
 Specialists in
CEMENT GUN CONSTRUCTION

Contracts Executed Anywhere
GUNITE CONCRETE AND CONSTRUCTION CO.
 BARCLAY A. GREENE, President
 1301 Woodswether Road, Kansas City, Mo.
 BRANCH OFFICES: St. Louis, Mo.; Chicago, Ill.; Birmingham, Ala.;
 Dallas, Tex.; La Feria, Tex.; New Orleans, La.; Atlanta, Ga.

 **SCHOOL DESKS**
The H. H. Andrews Co.
CHICAGO
 107 So. Wabash Avenue

 **GUNITE**
 THE
RUST ENGINEERING CO.
 Engineers and Contractors on all kinds of
 Cement-Gun Work
BIRMINGHAM, ALABAMA
 Chicago New York Pittsburgh Washington

 **CEMENT-GUN CONSTRUCTION CO.**
CONCRETE
 16 years experience placing sand
 and cement mortar with com-
 pressed air. Call our Engineering
 or Contracting Department for
 service.
 537 S. Dearborn St. CHICAGO
 Oliver Building PITTSBURGH
 Grand Central Terminal NEW YORK

"Knobbyette"
 the NEW
Light Gauge
CENTRAL
FLOOR PLATE
 Scientifically Designed
 Convenient to Handle
 Rust Resisting
 Costs Less Per
 Square Foot
 Send for a Sample
CENTRAL IRON
& STEEL CO.
 HARRISBURG, PENNA.
 Branches in all Principal Cities
 PROJECTIONS ACTUAL SIZE
 REG. U.S.
 PAT. OFF.
 Underwriters' Laboratories Inspected S.A. 443

SPECIFY
KERLOW
 Square and Triangular Mesh
FLOOR GRATINGS AND STAIR STEPS
 The strongest and lightest
BRIDGE AND FLOOR SLABS (Monolithic)
 Catalogue and Prices on request
KERLOW STEEL FLOORING COMPANY
 STEEL 222-228 Culver Ave., Jersey City, N. J.
 See Telephone book for representations

THE GEORGIA MARBLE COMPANY
 Producers and Manufacturers of
GEORGIA MARBLE
 Tate, Georgia
 Atlanta Chicago Cleveland Dallas New York



Southern Automatic Sprinkler Co., Inc.
 Automatic Sprinkler Systems
 Industrial Piping, Heating
 and Power Equipments
 Pipe Valves and Fittings
 Office and Plant:
 3113 S. 3rd Ave. BIRMINGHAM, ALA.

BOLTS
NUTS
RIVETS

OLIVER

OLIVER IRON AND STEEL CORPORATION
 PITTSBURGH, PA.

FORGINGS
UPSET RODS
FORGED TOOLS

FINANCIAL NEWS

Bond Issues Proposed

Ark., Conway—City plans voting soon on \$70,000 bonds; Hospital acquisition, \$20,000; city hall building, \$50,000.

Ark., Gurdon—City, Comms. of Paving Dist. No. 1, plans selling bonds.

Ark., Little Rock—State Note Bd. sell \$15,000,000 highway bonds June 24; also \$1,500,000 agricultural credit obligations.

Ga., Ellijay—City, J. H. Penland, Mayor, opens bids July 1 for \$22,000, \$2,000-denom., 5% water works bonds.

La., Gonzales—City, Mayor and Bd. of Aldermen, A. B. Coroy, Clk., opens bids June 22 for \$10,000, 6% public improvement bonds.

La., Lake Charles—Calcasieu Parish School Bd. called election for July 7 on \$90,000 bonds for rebuilding Lagrange building.

La., Newellton—City, H. C. Lang, Acting Mayor, opens bids July 1 for \$35,000 water works bonds.

La., Natchitoches—City Comsn., G. H. Pierson, Commr. of Finance, opens bids June 1 for \$55,000 public utility bonds.

Md., Brunswick—City, Harry C. Allgire, Mayor, will vote on \$100,000 water works bonds.

Md., Laurel—City, J. H. Fetty, Mayor, voted \$10,000 street improvement bonds.

Miss., Greenwood—Leflore County, A. R. Bew, Clk. of Bd. of Suprs., opens bids July 7 for \$150,000, not to exceed 6% road bonds.

Miss., Gulfport—Harrison County voted \$20,000 school building bonds.

Miss., Hattiesburg—Eatonville Consolidated School Dist. \$25,000 bond issue, reported, declared void.

Miss., Jackson—State Bond Comsn. opens bids July 1 for \$5,000,000 bonds for redemption of outstanding bank guaranty certificates.

Miss., Natchez—Adams County may vote on \$500,000 road bonds.

Mo., Webster Groves—City votes June 30 on \$100,000 city hall and fire station bonds.

N. C., Durham—City Council authorized \$50,000 sewer bonds.

N. C., Fayetteville—Cumberland County Comms. authorized issuance of \$205,000 funding bonds.

N. C., Henderson—Local Government Comsn. approved \$355,000 bonds: Court-house and jail, \$230,000; funding and refunding, \$125,000.

N. C., Wilson—City, Bd. of Aldermen, passed ordinance providing for \$100,000 electric light bonds.

N. C., Wilson—Bd. of Comms., O. A. Glover, Clerk, authorized \$150,000 bonds; \$100,000 electric light; \$50,000 funding; Local Government Comsn. in charge of sale; Chas. B. McLean, Mayor.

Okla., Arnett—Ellis County votes June 16 instead of May 26 on \$100,000 road bonds.

Okla., Boise City—City voted \$55,000 sewage disposal plant bonds.

S. C., Anderson—Anderson County probably ask bids in few days for road work to cost \$40,000.

Tex., Baird—City, H. Schwartz, Mayor, postponed sale of \$20,000, 6%, \$1000 denom. refunding bonds and warrants.

Tex., Brownwood—City, School Bd., plans issuing \$80,000 bonds.

Tex., Channing—City voted \$60,000 school bonds.

Tex., Farwell—City votes June 20 on \$30,000 school building bonds.

Tex., Fort Worth—City may vote July 21 on \$250,000 jail bonds.

Tex., Fort Worth—City, Bd. of Education revised resolution ordering \$4,750,000 school bond election on June 24 to omit issue for assumption of \$183,000 outstanding indebtedness of Handley School Dist.

Tex., Henderson—Gaston Ind. School Dist. voted \$40,000 bonds.

Tex., Houston—City, Harry A. Giles, City Controller, opens bids July 6 for \$2,490,000 4½ and 5% bonds for various improvements.

Tex., Leakey—Real County voted \$85,000 road bonds.

Tex., Longview—City votes June 30 on \$120,000 bonds for street paving, waterworks and sewerage improvements and extensions.

Tex., Palestine—City, O. C. Cutter, City Sec., opens bids June 22 for \$20,000, 5%, \$500 denom. airport bonds.

Tex., Palo Pinto—Palo Pinto County Road Dist. No. 3 votes June 13 on \$150,000 road bonds.

Tex., Pampa—Gray County, Ray Wilson, County Aud., opens bids June 15 for \$300,000, \$1000 denom., 5% bonds.

Tex., Panhandle—Carson County, Frank Elston, County Judge, plans selling \$250,000, 5% special road bonds.

Tex., San Angelo—Glenmore School, W. M. Holland, Pres., Bd. of Trustees, votes in about four weeks on \$12,000 bonds.

Tex., San Antonio—City, School Bd., L. D. Gilmore, Chmn., Finance Committee, opens bids June 16 for sale of \$700,000 or \$750,000 of \$1,750,000 issue approved in December, 1930.

Tex., Ysleta—Ysleta School Dist. considering \$60,000 bond election.

Va., Hampton—City, School Bd., Robert M. Newton, Supt. of Schools, opens bids June 17 for \$110,000, not to exceed 5% school bonds.

W. Va., Martinsburg—City plans issuing \$100,000 waterworks bonds.

Bond Issues Sold

Ark., Russellville—Pope County, J. Q. Hill, County Judge, sold \$150,000 courthouse building bonds to National Securities Co., Bankers Trust Bldg., Little Rock, at \$148,000.

La., Gretna—City, Bd. of Aldermen, sold \$150,000, 5% sewerage bonds to Well, Roth & Living Co., Dixie Terminal Bldg., Cincinnati, Ohio.

Md., Rockville—City, F. B. Abert, Clk., sold \$50,000, 4½% waterworks and sewer bonds to John P. Baer & Co., Charles & Saratoga Sts., Baltimore, at 100.80.

Md., Salisbury—Wicomico County, Rachel W. Morris, Clk., County Comms., sold \$200,000, 4½% bonds to Union Trust Co. of Maryland, Baltimore & St. Paul Sts., Baltimore, at \$104.662.

Miss., Greenwood—City, Bonner Duggan, City Clk., sold \$20,000, 5¼%, \$1000 denom. city hall equipment bonds to Merchants Bank & Trust Co., State St., Jackson, at par, accrued interest.

Miss., Hernando—De Soto County Pleasant Hill Consolidated School Dist. sold \$10,000, 6% school building bonds to T. P. Flinn and W. A. Lauderdale, both Hernando.

S. C., McCormick—McCormick County sold \$45,000, 5% funding bonds recently to Taylor, Wilson & Co., Cincinnati, Ohio.

Tex., Galveston—City sold \$800,000 school bonds to C. P. Mann & Co., American National Insurance Bldg., Galveston, at 99.5 and accrued interest.

Va., Falls Church—Town, L. P. Daniel, Mayor, sold \$125,000, 6%, \$1000 denom. waterworks bonds to Taylor, Wilson & Co., Cincinnati, Ohio, at \$127.500.

Va., Richmond—City, L. B. Edwards, Comptroller, sold \$1,000,000 bonds for \$1,053,375 to Harris, Forbes & Co., Emanuel & Co., both New York, Baker Watts & Co., Baltimore, and Frederick E. Nolting & Co., Richmond; approximately 3.93 basis; 4½%; \$100,000 street; \$350,000 sewer; \$300,000 James River Improvement; \$250,000 curb and gutter.

Va., Lynchburg—City, R. W. B. Hart, City Mgr., may sell \$450,000 bonds July 1.

W. Va., Charleston—State, Wm. G. Conley, Governor, sold \$5,000,000 road bonds to syndicate headed by Chase Securities Corp., New York, at 100.00204 for \$1,772,000 with 4¼% coupons, and \$3,228,000 with 3½% coupons.

New Financial Corporations

Ga., Fitzgerald—National Bank, capital \$100,000, chartered; J. J. Dorminy, Pres.

Ky., Clay—People's Bank, capital \$15,000, chartered; G. L. Withers, J. W. Franklin.

Miss., Meridian—First National Bank, L. Rothenberg, 501 23rd Ave., capital \$400,000, applied to Treasury Dept., Washington, for charter.

N. C., Elizabeth City—Pasquotank Investment Corp., capital \$100,000, chartered; A. L. Pendleton, G. R. Little.

S. C., Kingstree—Coastal Live Stock Loan

Corp., capital \$25,000, chartered; W. J. Smiley, J. H. Nexsen.

N. C., Greenville—State Bank & Trust Co., capital \$200,000, chartered; J. G. Moye, J. L. Little.

Va., Grundy—Buchanan County Bank, capital \$50,000, chartered; R. E. Williams, Pres.

Farmers National Bank, Ben D. Kingree, Pres., and Citizens Bank, J. E. Huffman, Pres., both Shelbyville, Tenn., merged under charter of Farmers National Bank of Shelbyville, and under corporate title of First National Bank.

Standard Gas and Electric Report

Combined net earnings of subsidiary and affiliated companies of the Standard Gas and Electric Company, Chicago, for the year ended March 31, 1931, showed a decrease of 1.77 per cent, as compared with the previous 12 months. Gross earnings amounted to \$152,036,480, as compared with \$154,992,079 and net earnings to \$73,158,107, compared with \$74,478,581. The Louisville Gas and Electric Company, Louisville, Ky., a subsidiary, had gross earnings of \$10,679,647, as compared with \$10,340,371, while net earnings were \$5,640,010, as compared with \$5,311,285. The Oklahoma Gas and Electric Company, another subsidiary, had gross earnings of \$13,608,905, as compared with \$14,429,089, and net earnings of \$6,234,376, as against \$6,732,529.

Universal Pipe and Radiator Report

A report of the Universal Pipe and Radiator Company, New York, for the quarter ended March 31, 1931, shows a net loss after all deductions, including depreciation, debenture bond interest, taxes, etc., of \$72,496, as compared with a loss of \$114,020 for the corresponding quarter in 1930. The company is said to be receiving a fair share of business and, according to Charles Gurenson, treasurer, efforts are being made to keep expenses down to the minimum.

Looks for Further Improvement

Louisville Varnish Company, Inc.
Louisville, Ky.

Editor *Manufacturers Record*:

Referring to our increased sales up to the middle of last month, as mentioned in a recent issue of the *MANUFACTURERS RECORD*, the gain for the entire month of May as compared with the previous months of this year was as follows:

January, 140 per cent; February, 100 per cent; March, 54 per cent; April, 48 per cent. Much more than 50 per cent of our shipments is going to manufacturers of high grade furniture and electric refrigerators. These should be considered quasi-luxuries.

Our department dealing with jobbers and dealers, to reach the country trade, to my surprise likewise shows the same ratio of increase and reports conditions steadily improving.

We look for a further improvement in June and a good July.

P. H. CALLAHAN, President.

TRINITY RIVER CONSERVANCY DISTRICT

Legislative Act Advances \$50,000,000 Canal Project

Fort Worth, Tex.—The passage of the Trinity River Canal and Conservancy District act at the recent session of the Legislature and its approval by Governor Sterling signalizes another forward step in the project to canalize the Trinity River from Fort Worth and Dallas to the Gulf of Mexico. This legislation, undertaken upon the advice of Congressman S. Wallace Dempsey, provides the necessary powers and fulfills legal requirements, it is said, that will be insisted upon by Congress for favorable action on the project. The project itself, estimated to cost from \$30,000,000 to \$50,000,000, is now being surveyed by Federal engineers, tentative plans calling for a canal of 100 feet bottom width and a standard depth of 9 feet to be obtained by a series of locks and dams. The boundaries of the area, as outlined in the bill, largely conform to the metropolitan areas of the two cities and Trinity River, the title to the stream, its banks, bed and water being entrusted to the district.

It is pointed out that a chief advantage accruing to the project, in addition to the backing of the state, is the creation of a legally responsible body to deal with Congress, since the Trinity River Canal Association, parent organization, has only a state charter and is not sufficiently responsible in the eyes of Congress to be tendered a contract for such a stupendous project. The right of eminent domain is granted the District

in order that the project may not be blocked or delayed by property owners refusing to sell rights-of-way for straightening the river channel where required. The District also has power to build, regulate and issue franchises for supplemental and incidental facilities, to prescribe rates and police the same, and to cooperate with Federal engineers in making preliminary surveys. The financial ability of the District concerns itself with a two cent tax in the two cities, which is expected to produce \$60,000 annually for five years, and the power to issue bonds for supplemental facilities. Assessments for benefits and damages for construction of local improvements are also permitted.

Bids on 11,000,000 Yards Levee

New Orleans, La.—Bids will be opened June 25 by the United States District Engineer, Second New Orleans District, for construction of approximately 11,000,000 cubic yards of earthwork in the Lower Tensas levee district. The work will be located on the east bank of the Mississippi River in Plaquemine Parish, Louisiana, about 35 miles from New Orleans.

\$567,000 Contract on Senate Building

Washington, D. C.—General contract for alterations to the C street facade of the Senate office building has been awarded to McCloskey & Co., Inc., Philadelphia, Pa., at \$567,790, by David Lynn, Architect of the Capitol, Wyeth & Sullivan, Washington, are the architects.

For Clean Coal Standards

The American Standards Association has been asked by the American Institute of Mining and Metallurgical Engineers to initiate a project for the establishment of standards for "clean bituminous coal." As chairman of the Coal Division of the Institute of Mining Engineers, Howard N. Eavenson explains:

"It is obvious that a mine shipping 'clean' coal on the minimum impurity basis is handicapped in competing with one shipping a larger amount, although both products may have been cleaned. In these days of price competition, all of these items count, and an agreed-upon basis will be of help not only to the shipper, but also to the consumer, who will then for the first time know what he may expect when he buys 'clean' coal and will have a standard by which he can measure it."

The request will be considered by the Association's Standards Council and, if approved, the work will be undertaken by a technical committee.

\$1,000,000 Oklahoma Construction

Oklahoma City, Okla.—Construction recently authorized by the Legislature on educational and other institutional buildings of the state will amount to more than \$1,000,000. The State Board of Affairs, W. C. Hughes, chairman, is developing details for various projects to be undertaken, some of which are expected to be under way shortly. Layton, Hicks & Forsyth, Oklahoma City, consulting and supervising architects of the Board, will handle most of the work, although some of the projects will be given to other architects.

HELPLEFULNESS

is the motto of this Bank.
Let us tell you about it.

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00 Member Federal Reserve System

IF YOU WANT TO GET—
Southern Business
Advertise in the
MANUFACTURERS RECORD

We Buy Bonds

City, County, School and Road from Municipalities and Contractors

WRITE
THE PROVIDENT SAVINGS BANK & TRUST CO.
CINCINNATI OHIO

JOHN NUVEEN & CO.

First National Bank Building CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

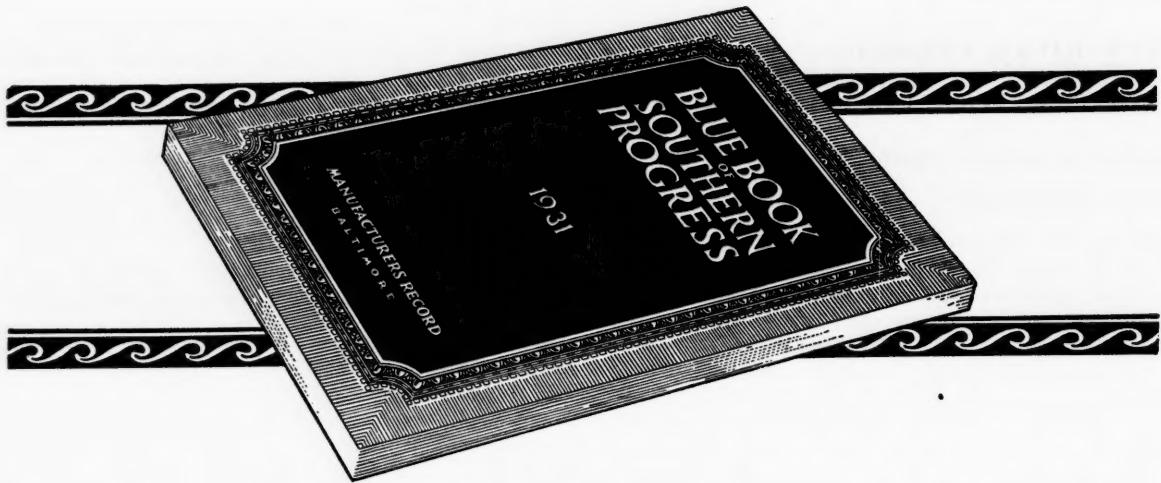
Write us if you have bonds for sale

HAVE YOU BONDS FOR SALE?

WE BUY ALL CLASSES OF MUNICIPAL BONDS, INCLUDING CITY, COUNTY, SCHOOL, PAVING, ROAD AND DRAINAGE

The Hanchett Bond Co. Inc.

39 SOUTH LA SALLE ST., CHICAGO



Ready for distribution June 10, 1931

Order Your Copy Now

Rates for copies

1000 or more 30c per copy
500 or more 40c per copy
Plus carrying charges

Less than 500 copies
50c per copy
Post paid

THE annual Blue Book of Southern Progress has a wide circulation among the country's leading executives, professional men, railroads, public utility operating and holding companies, banks, bond houses, public officials in states, counties and municipalities, and among commercial and business organizations generally.

It meets the growing demand for information about the South and is continuously referred to. Nowhere else can there be obtained such complete data in handy reference form for the executive and professional man. It is a recognized authority on Southern resources and development.

Subscribe Now

Manufacturers RECORD

Established 1882

Baltimore :: Maryland



PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close June 23, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 26, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., June 23, 1931, for furnishing all labor and materials and performing all work for new heating boiler, plumbing and heating changes in the U. S. post office, Brunswick, Ga. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at this office in the discretion of the supervising architect, JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 19, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 28, 1931.—**SEALED BIDS**, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 19, 1931, for furnishing all labor and materials and performing all work for the excavations and foundations of the U. S. post office, court house, custom house, etc., at Miami, Fla. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798.) Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 26, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 1, 1931.—**SEALED BIDS**, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 26, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, court house, custom house, etc., at Key West, Fla. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and Specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 16, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 23, 1931.—**SEALED BIDS**, in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 16, 1931, for furnishing all labor and materials and performing all work for clearing the site, excavation and foundations for the U. S. public health service building, Washington, D. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor and provided a deposit of \$15 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

GENERAL INFORMATION About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close June 18, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 28, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 18, 1931, for furnishing all labor and materials and performing all work for remodeling and enlarging the U. S. post office at State College, Pa. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798.) Drawings and specifications, not exceeding one set, may be obtained by any satisfactory general contractor at this office in the discretion of the supervising architect, JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 19, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 22, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., June 19, 1931, for furnishing all labor and materials and performing all work for new heating boiler, etc., at the U. S. post office, Centralia, Ill. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at that office in the discretion of the supervising architect, JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 24, 1931.

Sealed Bids, indorsed "Bids for Refrigerating Equipment, Specification No. 6522," will be received at the Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 o'clock a. m., June 24, 1931, and then and there publicly opened, for refrigerating equipment consisting of a motor-driven ammonia compressor, condenser, liquid receiver, brine cooler, oil and scale traps, motor-driven brine pump, safety devices and manual starting equipment, motor control and instrument panels and complete piping systems and wiring for the equipment; also materials for use in the construction of cold rooms at the Naval Station, Guantanamo Bay, Cuba. Specification No. 6522 and accompanying drawings may be obtained on application to the Bureau or to the Commandant, Naval Station, Guantanamo Bay, Cuba. Deposit of a check or postal money order for \$10, payable to the Chief of the Bureau of Yards and Docks, is required as security for the safe return of the drawings and specification. A. L. PARSONS, Chief of Bureau, June 3, 1931.

Bids close June 20, 1931.

U. S. Engineer Office, Mobile, Ala.—Sealed bids, in duplicate, subject to the conditions contained in the specifications, will be received until 11 o'clock A. M., June 20, 1931, and then publicly opened, for furnishing all labor and materials and performing all work of dredging approximately 5,620,000 cubic yards of material in the Mobile Bay Channel. Further information on application.

Bids close July 3, 1931.

Office of the Constructing Quartermaster, Fort George G. Meade, George G. Meade, Md.—Sealed proposals will be received in this office until 3:00 P. M., July 3rd, 1931, and then opened, for the Construction of Service Roads, Sidewalks, Water Lines, Sanitary and Storm Sewer Lines, Manholes and Catch Basins for Officers' and Non-commissioned Officers' Areas, in accordance with plans and specifications which may be had upon application to this office, by deposit of check for \$5.00, payable to the Treasurer of the United States.

Bids close June 29, 1931.

TREASURY DEPARTMENT, office of the supervising architect, Washington, D. C., June 1, 1931.—**SEALED BIDS** in duplicate, subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 29, 1931, for furnishing all labor and materials and performing all work for plumbing and heating changes at the U. S. post office, Jellico, Tenn. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at this office, in the discretion of the supervising architect, JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 18, 1931.

U. S. Department of Agriculture, Bureau of Public Roads, Yorktown, Virginia, May 29, 1931. **SEALED BIDS** will be received at the office of the National Park Service, Yorktown, Virginia, until 10 o'clock A. M., on June 18, 1931, for 7.9 miles of highway grading and structures; involving major items of approximately 285,000 cubic yards of Excavation, 2,600 cubic yards of Concrete Masonry, 400 cubic yards of Brick Masonry, 186,000 pounds of Steel Reinforcement, and 4,000 linear feet of Culvert Pipe. Where plans and specifications are requested, a deposit of \$25.00 will be required to insure their return within 15 days after opening of bids. Checks should be made payable to A. Zappone, Disbursing Clerk, Department of Agriculture. Plans, specifications and proposals may be obtained at the office of the Bureau of Public Roads, Willard Building, Washington, D. C., or at the office of the National Park Service, Yorktown, Virginia. THOS. H. MACDONALD, Chief of Bureau.

Bids close June 25, 1931.

U. S. Department of Agriculture, Bureau of Public Roads, Washington, D. C., June 9, 1931. Sealed bids will be received at the office of the Bureau of Public Roads, Willard Building, Washington, D. C., until 10 o'clock A. M. June 25, 1931, for 20.4 miles of highway, grading and structures in the proposed Shenandoah National Park, Va., involving major items of approximately 89 acres clearing and grubbing; 293,000 cubic yards of unclassified excavation; 9500 cubic yards tunnel excavation, unclassified; 11,641 cubic yards borrow excavation, unclassified; 566,562 station yards overall; 5959 M. ft. B.M.; 6178 lineal feet 18 inch C. M. pipe; 1174 lineal feet 24 inch C. M. pipe; 844 lineal feet 30 inch C. M. pipe; 34 lineal feet 36 inch C. M. pipe; 4800 lineal feet rustic guard rail; 220,000 gallons of asphalt oil applied, and other small items of work. Where plans and specifications are requested a deposit of \$25.00 will be required to insure their return within 15 days after the opening of bids. Checks should be made payable to A. Zappone, Disbursing Clerk, Department of Agriculture. Plans, specifications and proposals may be obtained at the office of the Bureau of Public Roads, Willard Building, Washington, D. C., or at the office of the Bureau at Skyland, Virginia. THOS. H. MacDONALD, Chief of Bureau.

Bids close June 19, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 25, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., June 19, 1931, for furnishing all labor and materials and performing all work for renewal of hot water piping in the U. S. treasury bldg., Washington, D. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Drawings and specifications may be obtained from the custodian at the building or at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 1, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 3, 1931.—**SEALED BIDS**, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., July 1, 1931, for furnishing all labor and materials and performing all work for the construction of the U. S. post office, etc., at Lamar, Mo. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 23, 1931.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans' Bureau, Room 764, Arlington Building, Washington, D. C., until 2:30 P. M., June 23, 1931, and then publicly opened for furnishing all labor and materials and performing all work required for constructing and finishing complete at U. S. VETERANS' HOSPITAL HUNTINGTON, WEST VIRGINIA, BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, cast stone, architectural terra cotta, marble work, floor and wall tile, rubber tile, compressed asphalt tile and linoleum floors, terrazzo, iron work, flag pole, steel sash, steel stairs and slate or soap stone and metal treads, steel shelving, cabinets and partitions, slate, metal and built-up roofing, lightning conductors, roof ventilators, metal lathing, plastering, sound deadening, carpentry, platform scales, metal weatherstrips, insect screens, window shades, painting, glazing, hardware, plumbing, refrigerating and ice making plant, boiler plant, radial brick chimney, heating and ventilating, electrical work, electric elevators, nurses' call system, fire alarm system, and outside sewer, water, gas, steam and electric distribution systems. **SEPARATE BIDS** will be received for (a) General Construction including Radial Brick Chimney; (b) Plumbing, Heating, Electrical Work and outside distribution systems; (c) Electric Elevators; (d) Steel Water Tank and Tower; (e) Refrigerating and Ice Making Plant; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract and in making awards, the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Construction Division, Room 764, Arlington Building, Washington, D. C. While no deposit will be necessary, return of the drawings and specifications within ten days after date of opening bids will be required. In case no bid is to be submitted the return of plans and specifications, as soon as this fact has been determined, and before the date for opening bids, is requested. Compliance with the requirement and with the request indicated will be considered in connection with future applications for drawings and specifications. JOHN D. CUTTER, Acting Director.

Bids close June 17, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 20, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., June 17, 1931, for furnishing all labor and materials and performing all work for two new cast iron heating boilers at the U. S. post office, court house and custom house, New Bern, N. C. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Specifications may be obtained from the custodian at the building or at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 24, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 5, 1931.—**SEALED BIDS** in duplicate subject to the conditions contained herein will be publicly opened in this office at 3 p. m., June 24, 1931, for furnishing all labor and materials and performing all work for relocating two boilers and other work incident to the construction of a vault in the north court of the U. S. Treasury, Washington, D. C. Time of completion and cost will both be considered in award of contract. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Drawings and specifications may be obtained from this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 29, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 29, 1931.—**SEALED BIDS**, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 29, 1931, for furnishing all labor and materials and performing all work for construction of the U. S. post office at Winthrop, Mass. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931, (Public No. 798). Drawings and specifications, not exceeding 3 sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 16, 1931.

Bridge Extension

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for extending existing bridge as follows:

Howard County, Contract No. Ho-97-511—Extending existing stone masonry bridge, on the National Pike about 0.5 miles West of St. Johns Lane, with concrete arch construction.

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 16th day of June, 1931, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6, Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 2nd day of June, 1931.

L. H. STEUART, Secretary.

G. CLINTON, UHL, Chairman.

Bids close June 19, 1931.

U. S. Engineer Office, Mobile, Ala.—**Sealed bids**, in duplicate, subject to the conditions contained in the specifications, will be received until 11 o'clock A. M., June 19, 1931, and then publicly opened, for furnishing all labor and materials and performing all work of dredging, approximately 1,070,000 cubic yards of material in Mississippi Sound, Bay of Biloxi and Back Bay, at Biloxi, Miss. Further information on application.

Bids close June 26, 1931.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 5, 1931.—**SEALED BIDS**, in duplicate subject to the conditions contained herein, will be publicly opened in this office at 3 p. m., June 26, 1931, for furnishing all labor and materials and performing all work for construction of the U. S. post office, etc., at Hallowell, Maine. The prevailing rate of wage shall be paid all laborers and mechanics employed on the project as provided in the Act of March 3, 1931 (Public No. 798). Drawings and specifications, not exceeding three sets, may be obtained at this office in the discretion of the supervising architect by any satisfactory general contractor, and provided a deposit of \$15.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. Cash deposits will not be accepted. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 16, 1931.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building six sections of State Highway as follows:

Baltimore County, Contract No. B-197-44—One section of State Highway along the Falls Road from the end of Contract B-128 north of Blackrock toward the Carroll County Line, a distance of 1.57 miles (concrete).

Carroll County, Contract No. CI-96-52—One section of State Highway from Hampstead toward Mexico, a distance of 1.04 miles (concrete).

Cecil County, Contract No. Co-110-24—One section of State Highway from Fair Hill to the Pennsylvania State Line, a distance of 1.52 miles (concrete).

Harford County, Contract No. H-123-42—One section of State Highway along the Churchville-Dublin Road from the end of Contract No. H-82 at Trappe Church to the Conowingo Road, a distance of 1.52 miles (macadam).

St. Mary's County, Contract No. SM-83-84—One section of State Highway along the Newmarket-All Faith Church Road, from the end of Contract No. SM-50, toward the Patuxent River, a distance of 2.27 miles (gravel).

Worcester County, Contract No. Wo-101-111—One section of State Highway along the Berlin-Delaware State Line Road, from the end of Contract No. Wo-67, to the Delaware Line, a distance of 7.62 miles (concrete shoulders).

will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Sts., Baltimore, Maryland, until 12 M. on the 16th day of June, 1931, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check, payable to the State Roads Commission of Maryland, as required by Sec. 6, Chapter 539, Acts of 1931, of the amount as set forth in the proposal form.

The successful bidder will be required to give bond, and comply with the Acts of the General Assembly of Maryland, respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 2nd day of June, 1931.

G. CLINTON, UHL, Chairman.

L. H. STEUART, Secretary.

Bids close June 23, 1931.

Virginia Highway Work

Richmond, Va.

Sealed bids will be received Tuesday, 10 A. M., June 23, 1931, Va. Dept. of Highways, Richmond, Va., for the construction of:

Proj.	Length	Type excava.	Sq. Yds.
461	3.2 Mi.	Mac.	4,000 35,450
574	0.2	Gravel	1,300 724 Cu. Yds.
593	1.5	Mac.	18,648 26,735
603	0.2	Mac.	34,685 2,011

Details obtainable upon request.

Bids close June 30, 1931.

Concrete Bridges

Baton Rouge, La.

Sealed Proposals for the construction of the following projects will be received by the Louisiana Highway Commission, Room No. 614, Louisiana National Bank Building, Baton Rouge, Louisiana, until 9:45 A. M. on Tuesday, June 30, 1931. Proposals will not be received after this hour. At 10:00 o'clock A. M., on the same day and date, they will be publicly opened and read in the Chamber of the Senate in the State Capitol Building.

(BOND) PROJECT NO. 4905 — RED RIVER BRIDGE AT ALEXANDRIA on the Alexandria-Shreveport Highway — Located in Rapides Parish—Route No. 1. Description: 1—500 Simple Span Through Truss, 2—160 ft. Deck Trusses, 4—100 ft. Deck Trusses all on concrete piers, 1,892 lin. ft. Reinforced Concrete Trestle, roadway width 24 ft. Approximate quantities of the principal items involved are 2,550,000 lbs. Structural Steel, 1,222,000 lbs. Reinforcing Steel, 5,340 cu. yds. Class "A" Concrete, 34,030 cu. yds. Class "AA" Concrete, 5,600 cu. yds. Structural Excavation, 14,800 lin. ft. Precast Concrete Piles. Charges for Plans, \$20.00.

(BOND) PROJECT NO. 4604—OUACHITA RIVER BRIDGE AT MONROE on the Monroe-Shreveport Highway—Located in Ouachita Parish—Route No. 4 Description: 1 double leaf Strauss Bascule Span 160 ft. center to center trunnions, 6—100 ft. Deck Truss Spans all on reinforced concrete piers; also concrete deck girder approach spans, roadway width 40 ft., and 2—6 ft. Sidewalks. Approximate quantities of the principal items involved are 2,400,000 lbs. Structural Steel, 675,000 lbs. Reinforcing Steel, 9,150 cu. yds. Class "A" Concrete, 1,842 cu. yds. Class "AA" Concrete, 3,660 cu. yds. Class "A" Concrete in Seal Course, 52,800 cu. yds. Untreated Timber Piles,

64,000 lin. ft. Precast Concrete Piles. Charges for Plans, \$20.00.

(BOND) PROJECT NO. 1801 — RED RIVER BRIDGE AT SHREVEPORT on the Monroe-Shreveport Highway—Located in Bossier and Caddo Parishes—Route No. 4. Description: 1—520 ft. Cantilever Span with 2—182 ft. anchor arms, 6—100 ft. Deck Trusses all on reinforced concrete piers, 1,384 lin. ft. Reinforced Concrete Trestle, roadway width 40 ft., and 2—6 ft. Sidewalks. Approximate quantities of the principal items involved are 6,250,000 lbs. Structural Steel, 1,850,000 lbs. Reinforcing Steel, 2,412 cu. yds. Class "A" Concrete in approaches, 7,082 cu. yds. Class "A" Concrete in piers, 5,360 cu. yds. Class "AA" Concrete, 9,730 cu. yds. Pneumatic Excavation, 2,000 cu. yds. Structural Excavation, 27,700 lin. ft. Precast Concrete Piles. Charges for Plans, \$20.00.

(BOND) PROJECT NO. 1801-B—EAST APPROACH TO SHREVEPORT BRIDGE on the Shreveport-Monroe Highway — Located in Bossier Parish—Route No. 4—Length 1.38 miles—Width 20 ft.—Type, Portland Cement Pavement and other work in connection therewith, including an overpass over the St. Louis Southwestern Railroad. Charges for Plans, \$2.50.

(BOND) PROJECT NO. 3900—MISSOURI PACIFIC OVERPASS near Tullos on the Trout-Tullos Highway—Located in LaSalle Parish—Route No. 474. Description: 5—40 ft. Reinforced Concrete Deck Girder Spans on concrete bents and piles, 24 ft. roadway. Approximate quantities of the principal items involved are 260 cu. yds. Class "AA" Concrete, 133 cu. yds. Class "A" Concrete, 85,000 lbs. Reinforcing Steel, 8,100 lbs. Structural Steel, 1,530 lin. ft. Precast Concrete Piles, 145 cu. yds. Structural Excavation. Charges for Plans, \$2.00.

(BOND) PROJECT NO. 4411—CANE RIVER BRIDGE AT NATCHITOCHES on the Natchitoches-Alexandria Highway — Located in Natchitoches Parish—Route No. 20. Description: 11—40 ft. Reinforced Concrete Deck Girder Spans on concrete piles —24 ft. roadway and 2 Sidewalks. Approximate quantities of the principal items involved are 810 cu. yds. Class "AA" Concrete, 73 cu. yds. Class "A" Concrete, 225,000 lbs. Reinforcing Steel, 9,000 lbs. Structural Steel, 3,780 lin. ft. Concrete Piles. Charges for Plans, \$2.00.

Full information and proposal forms are available at the offices of the Highway Commission at Baton Rouge. Plans and specifications may be inspected there or will be furnished upon payment of the amounts specified above (not to be refunded).

O. K. ALLEN, Chairman,
Louisiana Highway Commission.

HARRY B. HENDERLITE,
State Highway Engineer.

Bids close June 23, 1931.

Notice to Contractors

Huntington, W. Va.
The Chamber of Commerce of Huntington, West Virginia, will be pleased to furnish all information desired as to building materials, sub-contractors, etc. to those intending to bid on the U. S. Veterans' Hospital to be located in Huntington. Bids opened June 23, 1931.

W. S. ROSENHEIM,
Managing Director.

Bids close June 30, 1931.

Fire Pump and Oil Engine

Leland, Miss.

Sealed bids will be received up to 7.00 P. M. Tuesday, June 30th, 1931, at the office of the City Clerk of Leland, Mississippi, on one Oil Burning Engine of approximately 600 horsepower and one 1900 gallon, one hundred pounds pressure, fire pump, with dual drive. Plans and specifications can be obtained from the City Clerk on application.

MARY P. JOHNSON, Clerk.

Bids close July 7, 1931.

Electric Light Plant

Ocala, Fla.

NOTICE is given that City Council, Ocala, Florida, on July 7th, 1931, at 8 P. M., will consider sealed proposals for furnishing and installing machinery in its Electric Light Plant. The costs thereof to be paid out of savings and/or earnings of plant.

Right is reserved to reject any and all proposals. If interested write
J. R. MARTIN, City Manager,

Bids close June 17, 1931.

Storm Drain

Easton, Md.

Sealed Proposals will be received and opened by the Mayor and Council of Easton, at their office, Easton, Maryland, at 2:30 P. M., Wednesday, June 17th, 1931, for constructing about one thousand feet (1000 ft.) of terra cotta pipe storm drain, ranging in size from fifteen to twenty inches (15-20") together with manholes, catch basins and connections.

Proposal blanks, Form of Contract, Specifications and Plans may be obtained from the Town Engineer, Room 204, Stewart Building, Easton, Maryland, upon payment of Two Dollars (\$2.00).

A certified check in the amount of Two Hundred and Fifty Dollars (\$250.00) must accompany each proposal.

The Mayor and Council reserve the right to reject any or all bids.

RALPH A. TOWNSEND,
Town Clerk.

E. G. KASTENHUBER, JR.,
Town Engineer.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

POTASH LEASES 4 to 30 miles of best U. S. Gov. core test in Texas (copy report free) and \$2,500,000 Texas Potash Corp. holdings, where press report states mining to start. C. H. C. Anderson, Linz Bldg., Dallas, Tex.

COAL

SOUTHERN WEST VIRGINIA
Smokeless coal, several thousands tons monthly; no middleman; mine direct to consumer, or dealer; good rating and prompt pay necessary. Write P. O. Box No. 368, Beckley, West Va.

BRICK SHALE

FOR SALE—Heavy beds of finest Building Brick Shale. Analysis by Georgia State Geological Survey of Atlanta, Ga., shows it suitable for the manufacture of high-grade building brick, building tile, drain tile, or tile roofing. Located three miles south of Chattanooga, Tenn., near Central of Ga. Railroad. If interested see
T. W. BROWN,
care Brown Fence Co., Chattanooga, Tenn.

Rates, Terms and Conditions

RATES: 20 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:

100 lines 28c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS. No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**FARM AND TIMBER LANDS**

3,500 ACRES of Young Pine and Hard wood timbered Grass land, fine water, and fishing, priced for \$3.00 per acre. FRANK SITTEL, McAlester, Oklahoma.

THE FOLLOWING TRACTS of land in North Florida are offered for less than they are worth for the purpose of liquidation. All well timbered with young long leaf pine.

18,000 acres good land at \$2.00 per acre.

11,000 acres at \$2.50 per acre.

440 acres at \$3.00 per acre.

F. L. GIBSON,
Thomasville, Ga.

FARM, FRUIT AND TRUCK LANDS**MISSOURI**

28,000 ACRES, STODDARD CO., MO.
Price \$60 per acre, total \$1,680,000. Clear. 50 sets improvements; hog-tight fence. On concrete highway. 5000 acres in cultivation. Fine crops. All drainage tax paid. GOODMAN, 1515-T Kansas City, Mo.

FARM, FRUIT AND TRUCK LANDS

TEXAS

FOR SALE—Wonderful 33,000 Acres, Famous "Winter Garden of Texas," Abundant Shallow Water, Ideal Climate, Sportsmen's Paradise, Right for Colonization at ½ Actual Value. D. R. Miller, Box 539, New Braunfels, Texas.

VIRGINIA

1,100 ACRES IN VIRGINIA, one hour by automobile west of Richmond. Gently rolling land, creek through center, much valuable growing wood and timber, 4 room hunting lodge, \$8,000. FRANK H. COX, Ashland, Va.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

FOR SALE

Manufacturing Rights on patented burial couchette. Royalty basis. RAYMOND LEE, 1160 East 82nd St., Los Angeles, California.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

BIG BARGAIN—For Sale, an up-to-date newspaper and job plant; cost \$8,000, for sale at \$3,500 and terms on part. Good field, good roads, schools, citizens, etc. Worth coming to see. Reasonable rent, waterworks and electric lights and power. For full particulars write. No curious need bother. Address G. B. TERRELL, Neon, Ky.

PARKERSBURG.

Successful manufacturers are invited to join this city's colony of prosperous, medium sized, diversified industrial plants.

BOARD OF COMMERCE, Parkersburg, West Virginia.

BUSINESS OPPORTUNITY: I have available suitable space, improved modern type machinery and equipment necessary for wood-working plant—furniture or other wood products. Also considerable standing timber. Would like to make connection with right party or parties interested in proposition of this kind. Would require some capital and absolute knowledge of business you would be interested in. Location good. Reputation already established for making A-1 products. Address No. 9102, care of Manufacturers Record, Baltimore, Md.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO., Woolworth Building New York City

INDUSTRIES WANTED

WANTED—Manufacturing plants to locate at Wardsville, W. Va. Electricity, good water, cheap labor, railroad facilities, good highway, beautiful and healthful mountainous section. Write Board of Trade, Wardsville, W. Va.

INDUSTRIAL PLANTS

FOR SALE—Sheet Metal Plant, equipped to manufacture Steel Desks, Radiator Cabinettes, Lockers, Steel Shelving, etc. Located in Birmingham District. Address MANAGER, P. O. Box 42, Birmingham, Ala.

FOR SALE

PATRICK HENRY COLD STORAGE PLANT. Located 3 miles west of the city of Martinsville, Va., on the Norfolk & Western and Danville & Western Railways, sidings from each to plant. Buildings and equipment modern and up to date.

20 Ton Ice plant and 60,000 barrel apple storage, enjoys large business. Electrically driven with steam auxiliary.

AT AUCTION—SATURDAY, JUNE 20th, 1931, at 2:30 P. M., on the premises.

TERMS CASH—POSSESSION, AT ONCE. This property located 30 miles from the famous Patrick County, Va., apple orchards, which have over 300,000 trees in bearing. One of the best propositions of the kind in the Country.

For further information, call on or write
E. J. DAVIS,
J. R. WALKER, } Committee.
H. L. BYRD,
P. O. Martinsville, Va.

FACTORY BUILDINGS

750 H.P. WATER POWER and about the same Steam Power. Factory must be sold immediately at sacrifice, containing 253,000 square feet of floor space; 59 miles from N. Y. City; water and rail transportation. Full particulars upon request.

LOEB & SCHOENFELD CO.,
1123 Broadway, N. Y. C.

FACTORY SITES

TWO AND ONE-QUARTER MILES railroad frontage industrial sites for sale at Baton Rouge. Southern Land and Investment Company, Baton Rouge, La.

WEST VIRGINIA FACTORY SITE

Adjoining town. Along with good water power electric plant. Also fuel oil auxiliary for emergency use. On railroad siding. Will lease or sell. Prices reasonable. Development desired. Will offer inducements. Address No. 9097, care Manufacturers Record.

PATENT ATTORNEYS

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

PAUL B. EATON, Patent Attorney
1408-R Johnston Bldg., Charlotte, N. C.
314 McLachlen Building, Washington, D. C.
417 Wachovia Bldg., Winston-Salem, N. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 892, National Press Building, Washington, D. C.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F, Washington, D. C.

REPRESENTATIVES WANTED

WE MAKE Water Conditioning Chemicals and desire to communicate with men now active, calling on the power trade or handling boiler room specialties. Work is highly remunerative. Address No. 9060, care of Manufacturers Record.

SITUATIONS WANTED

ONE OF THE BEST KNOWN traveling salesmen in South and Southwest desires position with manufacturer catering to railroads, hardware and supply jobbers and large industrial; best of references. No. 9111, care of Manufacturers Record.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty-one years. Send only name and address for details.

R. W. BIXBY, INC.,
103 Downtown Bldg. Buffalo, New York

MACHINERY AND SUPPLIES

WILLIAMS PATENT GRINDER (Infant), complete with pneumatic system, pipes, etc., very cheap. Used only a few hours. Engineering Company, Tenth & Carroll, St. Louis, Mo.

125 H. P. CORLISS ENGINE, 12"x24" Allis-Chalmers, 9"x15" wheel. Very fine condition. Price \$500 F.O.B. cars Buffalo, N. Y. Also other machinery at low price.

A. HOEFNER & SONS,
160 Van Rensselaer St., Buffalo, N. Y.

FOR SALE

Steel Tank, made of ¾" steel plates. Size 8'x28'; round, fine condition, practically new; never on ground. Can be used for oil, gasoline or water. Bargain price.

I. K. DYE, Elkins, W. Va.

OIL ENGINES, Steam Engines, Motors, Shafting, Pulleys, Hangers. All kinds transmission and motive power equipment. Exceptionally low prices. Write or wire STANDARD MILL SUPPLY COMPANY, 1301 Waldheim Building, Kansas City, Mo.

ELECTRIC WELDING PLANT with air compressor, acetylene cutting outfit, cables, airhose and tools, mounted on 3 ton truck. Ideal outfit for Marine, Industrial or Oil field purpose—A1 condition. Photo on request. Price \$2,500, f.o.b. New Orleans. Write 305 Wells Fargo Bldg., New Orleans, La.

DEEP WELL PUMP FOR SALE

One A. D. Cook Double Action Type 1L 45 Gal. per minute Deep Well Pump, with or without Howell Red Band 7½ H.P., 1200 R.P.M. Motor and starter, now in daily service. SUPERINTENDENT WATER WORKS, Inman, South Carolina.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



BOILERS

High pressure water tube and H. R. T. boilers at unbelievable prices. We have them in practically every southern state and are scrapping all but the very best. Write us your requirements.

W. M. SMITH & CO.
Box 1709 Birmingham, Ala.

Familiarize yourself
with the

SOUTH'S progress

by reading the

MANUFACTURERS RECORD
BALTIMORE, MD.

FOR SALE

50,000-gallon elevated tank, 100,000-gallon steel reservoir, electric jappanning oven, woodworking machinery, exhaust fans, blue print machine, dry kilns.

J. W. ANDERSON
Rock Hill, S. C.

RESALE DEPARTMENT

MACHINERY EQUIPMENT SUPPLIES

Retail Lumber Business For Sale

Fully equipped, including woodwork shop. Business well established. Reason for selling to close estate.

For further information apply to G. A. Harris, Administrator, National Bank of Suffolk Building, Suffolk, Virginia.

IF IT'S NEW PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
34th Street and C. R. R. of N. J. Bayonne, N. J.

TRANSFORMERS

SALES AND REPAIR SERVICE

Quick Delivery and Low Prices



A complete stock of transformers 1 to 1000 kva. Modern methods make our repair service second to none. Special service on breakdown jobs.

*All transformers guaranteed for one year.
Write for Catalog. No. 125-E.*

The Electric Service Company, Inc.
"America's Used Transformer Clearing House"
212 Walnut St., Cincinnati, Ohio



PIPE NEW SECOND HAND

Overhauled and Tested
New Threads and Couplings
Established 1904

**Albert & Davidson
Pipe Corp.**

Second Ave., 50th-51st St., Brooklyn, N. Y.
Telephone Sunset 1900

LATHES

48"x18" Lodge & Shipley, geared head, AC motor
38"-60"x32" McCabe, 2 in 1, belt drive
28"-48"x14" McCabe, 2 in 1, belt drive
28"x30" Harrington, belt drive
27"x12" LeBlond, belt drive
24"x8" Lodge & Shipley, belt drive
20"x20" Lodge & Shipley, belt drive
16"x8" Lodge & Shipley, geared head, AC motor
14"x6" Monarch, belt drive, taper and collets.

**O'BRIEN
Machinery Company**

113 N. Third St. Philadelphia, Pa.

If you want to get
SOUTHERN business
advertise in the
MANUFACTURERS RECORD
BALTIMORE, MD.

PIPE FOR EVERY PURPOSE

JOS. GREENSPON'S SONS
IRON AND STEEL COMPANY
ST. LOUIS, MO. - TULSA, OKLA. - NEW YORK CITY

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 3/4".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20", and 24".
Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

Oil Engine Generating Sets, Switchboards, etc. FOR SALE

Two 200 H. P.—Fairbanks-Morse Type Y—Style V—Diesel Type Engines—direct connected each respectively to 170 KVA Alternating motors, each delivering 125 effective Kilowatts—Three phase—60 cycles—2300 volts to switchboard. Each unit complete with exciters and four panel distributing switchboard. Will sell bargain price together or separately. First class condition. Can be seen operating.

Address

PISGAH MILLS
Box No. 1009 Greenville, S. C.



Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

SATISFACTION

ALBERT PIPE SUPPLY CO., INC.

NEW-RECLAIMED-USED

PIPE

ALL SIZES CUT TO SKETCH AND STOCKED

BERRY & NORTH 13th STS.
BROOKLYN, N.Y.

GUARANTEED

SERVICE PRICES

8" GALVANIZED CORRUGATED PIPE

6000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. Suitable for exhaust drains, water systems, sewers, conduits, etc. Have the necessary connecting sleeves. Priced considerably under the market.

1000 ft. 12" NAYLOR Black asphalted spiral welded slip joint pipe, slightly used.

MARINE METAL & SUPPLY CO.
167 South St., New York City

Second Hand and New Wrought Steel **PIPE** Overhauled New Threads and Couplings
Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-205 Maspeth Ave. Brooklyn, N. Y.



RAILROAD AND CONTRACTORS' EQUIPMENT



Shovels or Cranes

FOR SALE

1—Factory rebuilt Lima 1½ cu. yd. capacity. This machine can be equipped with either shovel, clamshell, dragline or drag shovel attachments. Very reasonably priced. Carries new machine guarantee. Located at Newark.

GENERAL ¾-yd. combination shovel, backhoe, 2 buckets, and crane boom. Very good condition, located Long Island.

1—Type B Erie shovel or clamshell machine, good condition. Located Newark, N. J.

Complete Shovel Attachment for Type "O" Thew. Also, attachment for Type B and B-2 Eries located in New Jersey. Decided bargains.

P & H 1¼ yd. Gas Shovel. Excellent condition, very attractive price. Located Newark, N. J.

1—Linn Tractor, 6-yd. capacity, with Waukesha Motor. Machine in very good condition. Priced to sell quickly. Located New York State.

We have both Steam and Gasoline Excavators ranging from ½ to 1½ cu. yd. capacity in various parts of the country that will be sold at extremely low prices or leased with leased payments made applying on purchase price.

LIMA EXCAVATOR SALES AGENCY

Eastern Offices and
Lima, O., Office: Warehouse,
Lima Trust Bldg. 317 Frelinghuysen
Tel. Main 4824 Ave., Newark, N. J.
Tel. Waverly 2-0640
Wire or phone at our expense.

FOR SALE

1—1/3-yd. Universal Power SHOVEL, Fordson Tractor Plant, equipped with Clamshell Boom and extra Drum for Clamshell operation. In condition to go to work at once, together with \$150.00 worth of new spare parts. The original cost \$5500.00. My price \$2000.00. Location—Virginia.

EDWARD W. PETERS
DANVILLE, PENNA.

36" PORTABLE TRACK

25 lb. rails—7 steel ties per 15 ft. section. Over ten miles, located Ocala, Fla. Also locomotives, cars, cranes and shovels.

EQUIPMENT CORPORATION OF AMERICA
1186 So. Washtenaw Ave., Chicago

FOR SALE

1—Osgood 1-cu. yd. Gasoline SHOVEL mounted on caterpillars; 4 yrs. old; in splendid condition, together with 1—40 ft. Lattice Steel Boom. 1—¾-yd. Clamshell Bucket. Shop Number about 2100. Location—Central Pennsylvania. Price \$4250.00.

EDWARD W. PETERS
DANVILLE, PENNA.

FOR SALE

P. & H. Model 206, ¾-yd. Dragline.
Byers, 10-ton Caterpillar Crane, ¾-yd. Clam.
O. & S. 22½-ton Loco. Crane 50' Boom.
16—12-yd. Western Steel Beam Dump Cars.
10—50-ton capy. All Steel Twin Hopper Cars.
75-ton, 20x26" 6-Driver Switcher, A. & M. E.
50-ton, 18x24" 6-Driver Switcher.
92-ton, 20½x28" Mikado (2-8-2) BUILT 1923.
35-ton, 13x20" 4-Driver Sad. Tank.
56-ton, 18x24" 4-Driver Sad. Tank.

WE HAVE OVER FORTY LOCOMOTIVES IN STOCK. REBUILT AND READY ALL TYPES. 10 TO 100 TONS

Southern Iron & Equipment Co.,
Atlanta, Ga.

50 TONS
100 LB. RELAYING RAILS

150 TONS
80 LB. RELAYING RAILS

HENRY LEVIS & COMPANY
Commercial Trust Bldg. Philadelphia

RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material in stock near you.

WE BUY RAILS FIT TO RE-LAY
ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.
New Frogs and Switches at low prices.

RELAYING RAILS—SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.

P. O. Box 5253 Boston, Mass.

STEEL SHEET PILING

NEW and USED

Sold — Bought — Purchased

Stocks at principal points.

HYMAN-MICHAELS COMPANY

St. Louis CHICAGO New York
Houston San Francisco Seattle

NEARLY NEW

I BEAMS

BEING SACRIFICED

204 pieces 18" 65 lb., 29' 4"

84 pieces 8" 18 lb., 36'

Low Price to avoid rehandling.

ZELNICKER IN ST. LOUIS

Piling, Rails, Equipment, Oil Engines, Etc.

FOR SALE

1—11"x13" Clyde Reversible Link Motion Swinging Engine, bought brand new, used thirty days.

1—8¼x12 W. A. Crook & Bro. Reversible Link Motion Swinging Engine.

1—9x12 W. A. Crook & Bro. Reversible Link Motion Swinging Engine.

1—Set of 14-3/16" Twin Engines built by W. A. Crook & Bro. First class condition.

1—81"x15'9", 150 H.P. Vertical Submerged Tube Boiler, complete, built for 125 lb. steam working pressure. Newly tubed and in first class condition.

T. G. ADAMS MACHINERY CO.

220 W. Bay St., Savannah, Ga.
P. O. Box 1597

CARS & LOCOMOTIVES

2—12-ton Plymouth, 36" ga. Gas.
1—8-ton Plymouth, 36" ga. Gas.
1—8-ton Whitcomb, 36" ga. Gas.
30—4 yd. & 5 yd. 36" gauge Dump Cars.

DRAGLINES & PUMPS

1—4 yd. Monaghan 110' Boom Diesel.
1—2 yd. Monaghan 70' Boom Diesel.
1—1¼ yd. Northwest—Gas.
3—10-ton Holt Tractors.
Dragline Buckets, ¾ yd. to 5 yd.
6—2 yd. Lakewood Conc. Dump Buckets.
Gas & Steam Hoists, 75 to 100 H.P.

R. J. Blackburn, Inc.
8245 Idaho Ave. St. Louis, Mo.

FOR SALE

1 Keystone Excavator
1 Bay City Tractor Shovel, with trench attachment
1 27-E Ransome Paver
1 5-S Smith Mixer
1 7-S Koehring Mixer
1 Chicago Pneumatic Air Compressor
1 C. H. & E Gasoline Hoist
1 Set Elevators

3,000 feet Blaw Knox 18" Curb Forms
2,000 feet 6" Gutter Forms

HANCOCK COMPANY

P. O. BOX 1515,
MOBILE, ALA.

FOR SALE OR LEASE

We have always on hand for sale or lease, Jordan spreaders, sixteen and twenty yard all-steel air dump cars, Model-75, Lorain gasoline shovel ready for immediate delivery in first class condition.

W. VA. CONSTRUCTION COMPANY

First Huntington National Bk. Bldg., Huntington, W. Va.

SELL THAT IDLE MACHINERY

Tell our readers about it through

THE RESALE DEPARTMENT

it may just suit the needs of someone.

Ask for rates

MANUFACTURERS RECORD, BALTIMORE, MD.

**SULPHURIC ACID
SUPERPHOSPHATE
TRIPLE SUPERPHOSPHATE
MANGANESE SULPHATE**

Manufactured and Distributed by

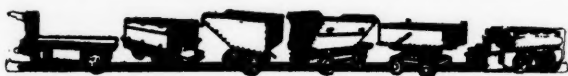
THE DAVISON CHEMICAL CO.

Main Office, Baltimore Trust Bldg., Baltimore, Md.

Main Plant, Baltimore; Pyrites Deposits Cienfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Plants Handling Complete Fertilizers and Fertilizer Materials: Maryland 11; Virginia 9; Pennsylvania 10; Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

INDUSTRIAL CAR EQUIPMENT



THE ATLAS CAR & MANUFACTURING CO.
Cleveland, Ohio

The original extra-capacity trailer — hauls bigger loads.

G. H. WILLIAMS CO.
622 Haybarger Lane,
Erie, Pa.



Branch Offices: New York, Pittsburgh, Cleveland, Chicago

WILLIAMS
TRAILERS—BUCKETS

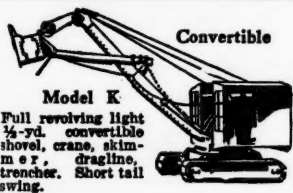
**BUCYRUS
ERIE**
**BUCYRUS
MONIGHAN**
WALKING
DRAGLINE
EXCAVATORS

SHOVELS
CRANES
DRAGLINES
DREDGES

Reliability!

Bucyrus-Eries are cutting costs in every part of the world. All sizes, types and powers of excavators. Railway cranes and "Load-master."

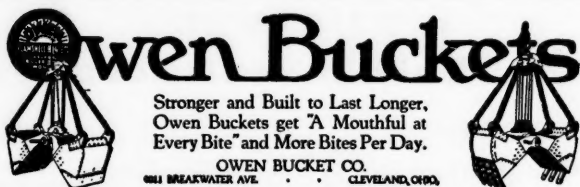
Bucyrus-Erie Co.
South Milwaukee, Wisconsin



POWER SHOVELS
Cranes, Trenchers
SKIMMERS

Full or part circle

BAY CITY SHOVELS, Inc.
Bay City, Mich.



Stronger and Built to Last Longer, Owen Buckets get "A Mouthful at Every Bite" and More Bites Per Day.

OWEN BUCKET CO.
901 BREAKWATER AVE. CLEVELAND, OHIO

**IF YOU WANT TO GET—
Southern Business
Advertise in the
MANUFACTURERS RECORD**

The
Toledo Torch



**Prevents
Accidents**

always there—always
lit—always seen •

Insist on the genuine Toledo Torch. No other safety light is so effective. Unbreakable, self-righting, stormproof, economical. Order through your dealer.



The Toledo Pressed Steel Co.
TOLEDO OHIO

Save with Steel

Manufacturers of The Toledo Horse—the ideal highway barricade



**NO-NOX
ETHYL**

Stops Knocks

...eliminates even the faintest click or ping. This assures a lightning getaway in traffic with a smooth fast pick up—makes traffic a pleasure.

At the
Sign of
the
Orange
Disc

NO-NOX ETHYL has an extremely low end point which gives it an instant vaporizing quality for quick easy starting on coldest days.

GULF REFINING CO.

DUSTDOWN

SETTLES THE DUST PROBLEM

Better and costs less than oil or straight calcium chloride. Unexcelled for gravel and dirt roads, parks, cemeteries, and private driveways.
J. Q. DICKINSON & CO., MALDEN, W. VA.



for economy and permanence in Road Building and General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings

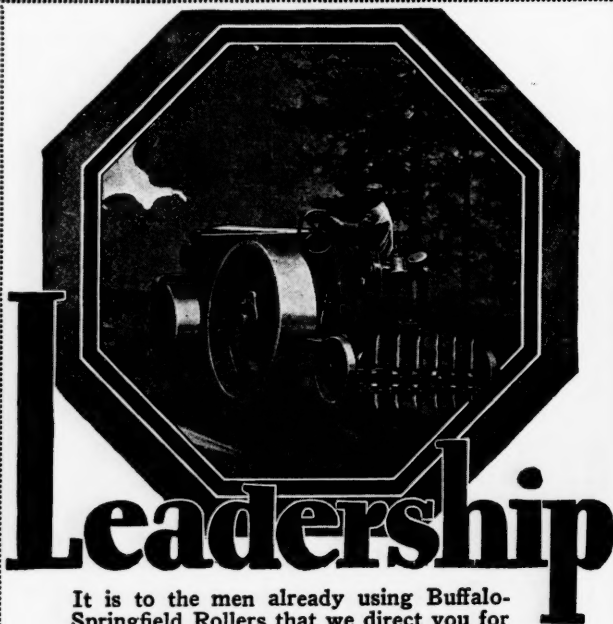
Filter Gravel, all sizes—Building Bricks

FRIEND & CO., INC. River St., Petersburg, Va.

ASPHALT PLANTS

THE SIMPLICITY
SYSTEM COMPANY

CHATTANOOGA, TENNESSEE



Leadership

It is to the men already using Buffalo-Springfield Rollers that we direct you for a frank, unbiased opinion of their practical worth. They, of all men, can best explain why the Buffalo-Springfield is, and long has been, the leader among road rollers.

Various models, steam and motor driven. All practical sizes. Scarifier and other attachments when desired. Booklet upon request.

The Buffalo-Springfield Roller Co.
Springfield, Ohio

BUFFALO-SPRINGFIELD

We produce in quantities to meet your requirements

SAND and WASHED GRAVEL

QUICK shipments by rail from Baltimore and North East, Md. or in scow and barge lots. Truck or rail shipments from Baltimore, Md.

The Arundel Corporation

MAIN OFFICE: ARUNDEL BUILDING
BALTIMORE, MARYLAND

Branches: New York, Norfolk and Miami

Crushed Stone Mascot Chatts Roofing Gravel Asphaltic Roadway Gravel Asphalt Filler Dust



AMERICAN LIMESTONE COMPANY
KNOXVILLE TENNESSEE

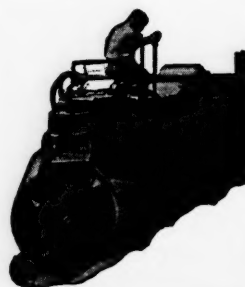
Tamping Costs Go Down!

There's far less time put in on hand tamping when you put down the asphalt with an ERIE Roller—

Better clearance, easier steering, shorter turning radius allow the ERIE to get into the close places and compact the asphalt close to curbs, corners, man-holes, etc.

Write today for Bulletin "M".

ERIE MACHINE SHOPS
Erie, Pa.



ERIE ROLLERS
Same from Quality

RUSSELL Highball Wheel Scraper

Road Plows

Rooter Plows

Road Drags

Write for Catalog
No. 30

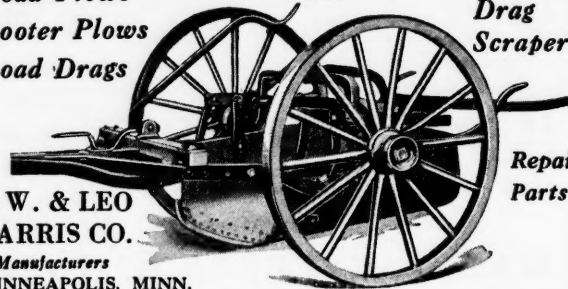
Fresno

Drag

Scrapers

B. W. & LEO
HARRIS CO.

Manufacturers
MINNEAPOLIS, MINN.



Repair
Parts

Facts About Diesel Crane Costs

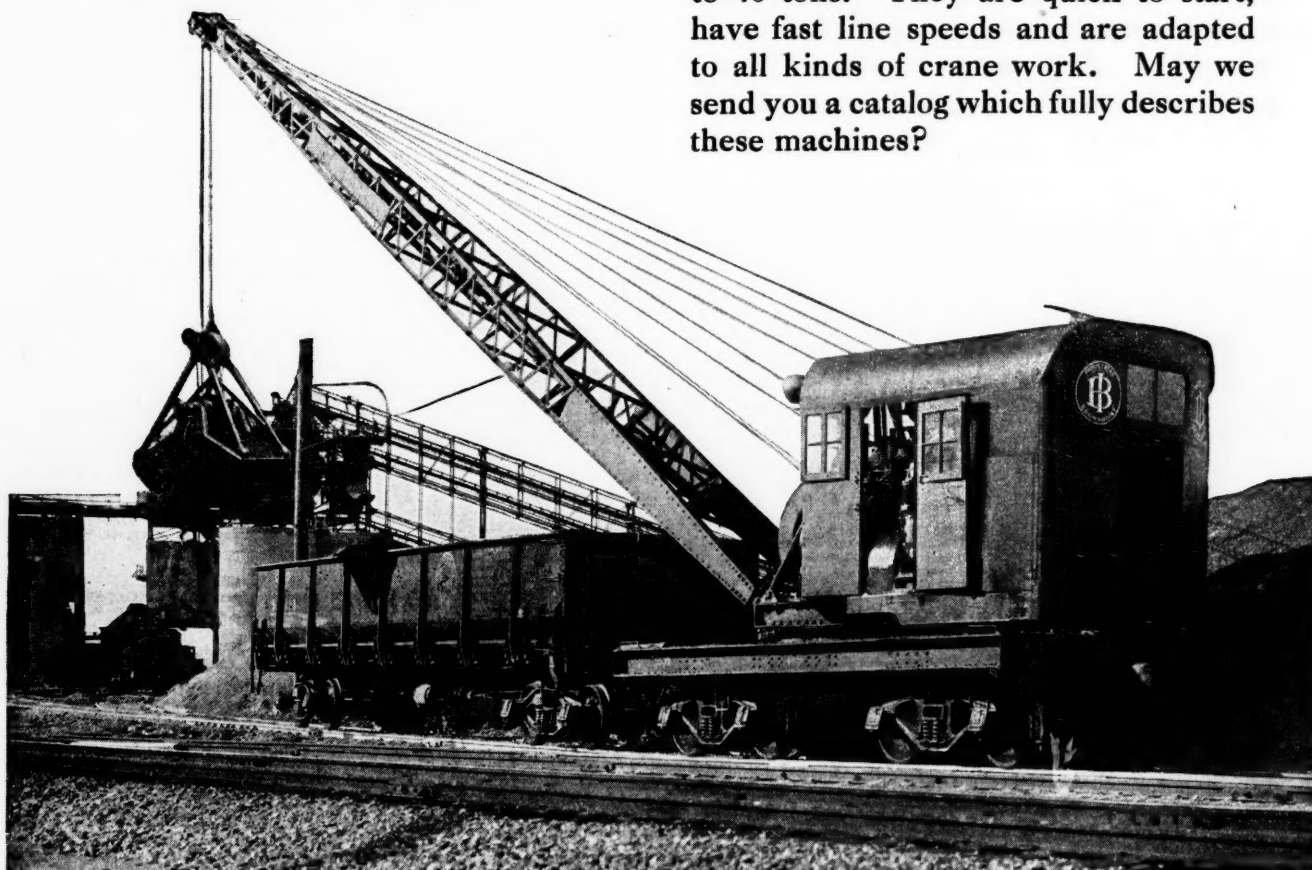
Many crane owners and operators have asked for information regarding Industrial Brownhoist Diesel crane operation—for facts with which their present handling costs could be compared. To these men—and thousands of others who are interested in Diesel crane performance—the figures below will show unusual economies.

The following table gives the actual fuel consumption and operating time on three 25-ton capacity Industrial Brownhoist Diesel locomotive cranes. The figures are those of a large user of cranes and cover an average month of 26 eight-hour working days.

	Crane No. 1	Crane No. 2	Crane No. 3
Hours Worked	199	196	207
Fuel Oil 8 hours (aver.)	17.6 gal.	17.0 gal.	15.5 gal.
Lubricating Oil 8 hours (aver.)	.5 gal.	.5 gal.	.5 gal.

Figuring the cost of fuel oil at five to ten cents per gallon (depending on your location), these Industrial Brownhoists cost from one to two dollars per day a piece for power. Considering their heavy-duty, six-cylinder engines, this cost is remarkably low.

Industrial Brownhoist Diesel cranes are built in capacities ranging from 15 to 40 tons. They are quick to start, have fast line speeds and are adapted to all kinds of crane work. May we send you a catalog which fully describes these machines?



Industrial Brownhoist Corporation, General Offices, Cleveland, Ohio

District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.

Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

INDUSTRIAL BROWNHOIST

Classified Reference Index for Buyers

ABRASIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.)
Audit Company of the South, Atlanta, Ga.
Ernst & Ernst, New York, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Quincy Compressor Co., Quincy, Ill.
Westinghouse Traction Brake Co., Wilmerding, Pa.

AIR CONDITIONING SYSTEMS.

Niagara Blower Co., New York, N. Y.

AIR HEATERS.

Babcock & Wilcox Co., New York.

AIRLOCKS.

Alco Products, Inc., New York, N. Y.

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

Conard, William R., Burlington, N. J.
Malin, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Chase, Wm. J. J., Atlanta.
Main, Inc., Chas. T., Boston, Mass.
Milburn, Helster & Co., Wash., D. C.
Moyer Co., Tilghman, Allentown, Pa.
Preacher & Co., Inc., G. Lloyd, Atlanta.
Sirrins & Co., J. E., Greenville, S. C.
Wheeler, Walter E., Minneapolis, Minn.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

ARCHITECTURAL IRON WORK.

Dietrich Brothers, Baltimore, Md.
Virginia Bridge & Iron Co., Roanoke, Va.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

—(Emulsified.)

Headley Emulsified Products Co., Philadelphia, Pa.

—Filler.

American Limestone Co., Knoxville, Tenn.

—Paving.

Barber Asphalt Co., Philadelphia, Pa.

—(Plants.)

Sanphilly System Co., Chattanooga, Tenn.

AUDITORS.

Ernst & Ernst, New York, N. Y.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Marnischke Corp., Milwaukee, Wis.
National Equipment Corp. (Insley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balto., Md.
Baltimore Trust Co., Baltimore, Md.
Bank of New York & Trust Co., New York City.
First and Merchants National Bank, Richmond, Va.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.

BARGES (Steel.)

American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa.

BARS (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa.
Connell Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Ingalls Iron Works Co., Birmingham.
Knoxville Iron Co., Knoxville, Tenn.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, O.
Virginia Bridge & Iron Co., Roanoke, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Timken Roller Bearing Co., Canton, Ohio.

—(Roller.)

Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.

—(Leather, Canvas, Rubber.)

Charlotte Leather Belting Co., Charlotte, N. C.

—Dressing.

Charlotte Leather Belting Co., Charlotte, N. C.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Fasteners.

Flexible Steel Lacing Co., Chicago, Ill.

—Lacing (Steel Hinges.)

Flexible Steel Lacing Co., Chicago, Ill.

BELT CONVEYORS.

Barber-Greene Co., Aurora, Ill.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Steel Lading.)

Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukegan, Wis.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York.

BLOCKS (Chain)

Wright Mfg. Co., Bridgeport, Conn.

—(Friction.)

Palmer Asbestos & Rubber Corp., Chicago.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.
Charleston Dry Dock & Machine Co., Charleston, S. C.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Cole Mfg. Co., E. D., Newnan, Ga.
Combustion Engr. Corp., New York, N. Y.
Hedges Walsh Weldner Co., Chattanooga, Tenn.
Lombard Iron Works & Supply Co., Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Schaffeld's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.

—(Oil.)

Babcock & Wilcox Co., New York.

—(Scotch Marine.)

Lookout Boiler & Mfg. Co., Chattanooga, Tenn.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.
Randle Machinery Co., The, Cincinnati, O.
Zelicker Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Babcock & Wilcox Co., New York.

—Tubes.

Babcock & Wilcox Co., New York.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Progressive Mfg. Co., Torrington, Conn.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Newen & Co., John, Chicago, Ill.
Provident Savings Bank and Trust Co., Cincinnati, Ohio.

BORINGS (Cora.)

Kennedy-Riegler Drilling Co., New York City.
Mott Core Drilling Co., Huntington, W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Baltimore, Va.
Sprague & Kenwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

BRAKE LINING

Palmer Asbestos & Rubber Corp., Chicago.

BRASS GOODS.

Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Vitrified, Paving.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—and Clayworking Machy.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Operating Machinery.)

Larrie Gear & Machine Co., Phila., Pa.

—Slabs

Kerlow Steel Flooring Co., Jersey City, N. J.

—Timber.

American Crosscutting Co., Louisville, Ky.
Kirby Lumber Co., Houston, Texas.

BRIDGES (Steel.)

American Bridge Co., New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bristol, Va.
Converse Bridge & Steel Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Roanoke Iron & Bridge Works, Roanoke, Va.
Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.
Michels Art Bronze Co., Covington, Ky.

BUBBLERS.

Rundle-Spence Mfg. Co., Milwaukee, Wis.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.
Industrial Brownhoist Corp., Cleveland, O.
Owen Bucket Co., The, Cleveland, Ohio.
Williams Company, G. H., Erie, Pa.

—(Coal.)

Owen Bucket Co., Cleveland, O.

—(Dredging, Excavating, Sewer, etc.)

Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.
Williams Company, G. H., Erie, Pa.

—(Elevator.)

Hendrick Mfg. Co., Carbondale, Pa.

—(Material Handling.)

Owen Bucket Co., Cleveland, O.

—(Ore Handling.)

Owen Bucket Co., The, Cleveland, Ohio.
Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Rehandling.)

Owen Bucket Co., Cleveland, O.

—(Sand and Gravel.)

Owen Bucket Co., Cleveland, O.
Williams Company, G. H., Erie, Pa.

BUILDERS and Contractors.

Copper Co., Inc., The John W., Richmond, Va.
Lockwood Greene Engrs., Inc., Boston.
Moyer Co., Tilghman, Allentown, Pa.
Thompson & Bros., T. C., Charlotte, N. C.
United Engineers & Constructors, Phila.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)

Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Ingalls Iron Works Co., Birmingham.
McClintic-Marshall Co., Pittsburgh, Pa.
Truscon Steel Co., Youngstown, O.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Portable Sheet Metal.)

Birmingham Tank Co., Birmingham.

BULKHEADS.

Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.

Trackson Co., Milwaukee, Wis.

BURLAP.

Fulton Bag & Cotton Mills, Atlanta, Ga.

BUSINESS METHODS.

Ernst & Ernst, New York, N. Y.

CABLE (Elevator.)

American Steel & Wire Co., Chicago, Ill.
Roebbling's Sons Co., John A., Trenton, N. J.

—(Stud Link.)

Woodhouse Chain Works, Trenton, N. J.

—and Wire (Electric.)

American Steel & Wire Co., Balto., Md.
Roebbling's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CALCIUM CHLORIDE.

Grasselli Chemical Co., Inc., Birmingham.

CAN and Box-Making Machinery (Tin.)

Bliss Co., E. W., Brooklyn, N. Y.

CANNING MACHINERY.

Robins & Co., A. E., Baltimore, Md.

CANVAS.

Fulton Bag & Cotton Mills, Atlanta, Ga.

CAE (Loaders and Unloaders)

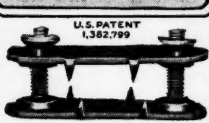
Barber-Greene Co., Aurora, Ill.

CARS (Dump, Industrial, Logging and Mine.)

Atlas Car & Mfg. Co., The, Cleveland, O.
Southern Iron & Equipment Co., Atlanta.

Tight Butt Joints

COMPRESSION
PRINCIPLE



FAMED FOR
DURABILITY

CONVEYORS



ELEVATORS



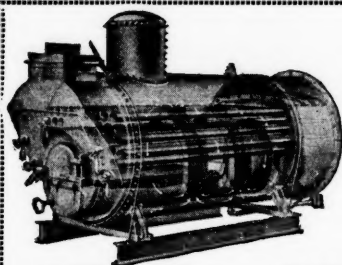
THE recessed plates embed in the belt and compress it instead of pulling against the bolt holes. This provides great surplus strength. It equalizes the pull throughout the plies. Keeps belt ends intact avoiding trouble. FLEXCO HD Belt Fasteners are in extensive use throughout many industries, giving long reliable service wherever tight butt joints are desired. Made in steel and in monel metal. Sold by jobbers and belting houses in 5 sizes. Recommendations supplied gladly.

FLEXIBLE STEEL LACING COMPANY
4890 Lexington Street Chicago, Illinois
In England at 135 Finsbury Pavement, London, E. C. 2

FLEXCO

HD

Belt Fasteners



ELEVEN SIZES
IN STOCK



SCOTCH MARINE BOILERS

WITH INTERNAL
WATER CIRCULATING DUCTS
AND SHAKING GRATES

LOOKOUT BOILER & MFG. CO.

CHATTANOOGA, TENN.

CHARLESTON DRY DOCK & MACHINE CO.

CHARLESTON, S. C.

Builders of All Welded Ships
MARINE AND STATIONARY BOILERS
Repairs to Steel and Wooden Vessels
1,500 and 600-ton Marine Railways

CONVERSE BRIDGE & STEEL CO. STRUCTURAL STEEL

For

Industrial Buildings, Mines, Refineries,
and the Building Trades

CHATTANOOGA

TENNESSEE

ECONOMY through Compressed Air



Here's Quincy WD-4 Duplex, a husky water-cooled unit that has found great favor for industrial uses. Maximum displacement, 128 cu. ft. Maximum pressure, 150 lbs. Equipped with pressure unloader. Motor requirements, 15 to 20 H. P., depending upon pressure and displacement. Full pressure lubrication clear to the piston pins.

THERE isn't a single doubt that compressed air is the most economical power available for many operations.

But to be of the greatest possible economy, the compressed air must originate in a compressor that is properly designed and carefully made—one that can be depended upon to deliver the most air at the least cost for power and upkeep—yes, and for replacement.

Quincy Compressors are of that kind—made to save you money from the very moment of installation.

Designed right and built right. Not cheap, but, oh, so good!

Write for complete details.

QUINCY

Compressors

216 Maine St., Quincy, Ill.

Service and Sales

Atlanta, Ga.
Birmingham, Ala.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio

Davenport, Ia.
Detroit, Mich.
Houston, Texas
Kansas City, Mo.
Memphis, Tenn.
Newark, N. J.

New Orleans, La.
Richmond, Va.
St. Louis, Mo.
Syracuse, N. Y.
Washington, D. C.

Also in Other Important Centers

P1231

- Steps (Safety.)**
Irving Iron Works Co., Long Island City, N. Y.
- CASSIONS (Foundations, Water Wells, etc.)**
United Welding Co., Middletown, O.
- CASTINGS (Alloy.)**
Mountain State Steel Foundries, Parkersburg, W. Va.
- (Brass, Bronze and Aluminum.)**
Richmond Foundry & Mfg. Co., Richmond, Va.
Savannah Mch. & Fdry. Co., Savannah, Ga.
- (Chilled Iron.)**
Fuller Lehigh Co., Fullerton, Penna.
- (Gray Iron.)**
Fuller Lehigh Co., Fullerton, Penna.
Glanorgan Pipe & Fdry. Co., Lynchburg, Va.
Jefferson Foundry Co., Birmingham, Ala.
National Cast Iron Pipe Co., Birmingham, Ala.
Richmond Foundry & Mfg. Co., Richmond, Va.
Salem Fdry. & Mch. Wks., Salem, Va.
Savannah Mch. & Fdry. Co., Savannah, Ga.
Schaffeld's Sons Co., J. S., Macon, Ga.
U.S. Pipe & Foundry Co., Burlington, J.
- (Malleable Iron and Steel.)**
Timken Bearing Co., Canton, O.
- (Semi-Steel.)**
Jefferson Foundry Co., Birmingham, Ala.
Salem Fdry. & Mch. Wks., Salem, Va.
- (Steel.)**
Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Delaware Co., Pa.
Lunkensheimer Co., Cincinnati, Ohio.
Mountain State Steel Foundries, Parkersburg, W. Va.
- CEMENT (Portland.)**
Alpha Portland Cement Corp., Birmingham, Ala.
- Guns.**
Cement-Gun Co., Inc., Allentown, Pa.
- Machinery.**
Traylor Engr. & Mfg. Co., Allentown, Pa.
- CHAIN BLOCKS (See Blocks, Chain.)**
- CHAINS (Dredge, Quarry, Steam Shovel.)**
Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.
- (High Speed Roller.)**
Diamond Chain & Mfg. Co., Indianapolis.
- (Silent Drive.)**
Diamond Chain & Mfg. Co., Indianapolis.
- (Welded.)**
Woodhouse Chain Works, Trenton, N. J.
- CHAIRS (Opera and Theatre.)**
Andrews Co., A. H., Chicago, Ill.
- CHEMICALS.**
Davison Chemical Co., Baltimore, Md.
Grasselli Chemical Co., Inc., Birmingham
- CHEMISTS, CHEMICAL ENGINEERS (Analytical.)**
Barrow-Agee Laboratories, Memphis, Tenn.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Longdale Laboratories, Inc., Richmond, Va.
Meigs, Bassett & Slaughter, Phila., Pa.
Moss, Jr., W. Wade, Columbus, Ga.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Fort Worth, Tex.
Stillman & Van Bieson, New York.
- (Consulting, Paper Industry.)**
Froehling & Robertson, Inc., Richmond, Va.
- CHIMNEYS (Concrete.)**
East Engineering Co., Birmingham, Ala.
- (Radial Brick.)**
Northwestern Chimney Constr. Co., Cleveland, O.
Rus. Engineering Co., Birmingham, Ala.
- Inspected and Repaired.**
Northwestern Chimney Constr. Co., Cleveland, O.
- CHLORIDE ACCUMULATOR.**
Electric Storage Battery Co., Phila., Pa.
- CHUTES.**
Cutler Mill Chute Co., Rochester, N. Y.
- CIRCUIT BREAKERS.**
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.
- CLOCKS (Watchman's Portable.)**
Davis-Paradis Watchman's Clock Corp., New York, N. Y.
- CLOTH (Wire.)**
Newark Wire Cloth Co., Newark, N. J.
- CLUTCHES (Friction.)**
Caldwell Co., Inc., W. E., Louisville, Ky.
- COAL (Bituminous.)**
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
- and Ash-Handling Mch.**
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
- Jigs.**
Steward Machine Co., Chas. C., Birmingham, Ala.
- Tipples.**
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.
- Washers.**
Steward Machine Co., Chas. C., Birmingham, Ala.
- COATINGS (Protective.)**
Headley Emulsified Products Co., Philadelphia, Pa.
- COCKS (Service.)**
Norec Nordstrom Valve Co., San Francisco, Calif.
- COKE.**
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
- COLUMNS (Cast Iron.)**
U. S. Pipe & Fdry. Co., Burlington, N. J.
- CONCRETE (Block Machinery.)**
Blystone Mfg. Co., Cambridge Springs, Pa.
- Construction (Reinforced.)**
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
East Engineering Co., Birmingham, Ala.
- Floor Slabs.**
Federal-American Cement Tile Co., Chicago.
- Mixers.**
Blystone Mfg. Co., Cambridge Springs, Pa.
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Jaeger Machine Co., Columbus, Ohio.
- Pipe Machinery (See Pipe Machinery, Concrete.)**
- Placing Equipment.**
National Equipment Corp. (Inley Division), Milwaukee, Wis.
- Roofing Tile.**
Federal-American Cement Tile Co., Chicago.
- CONDENSERS.**
Manistee Iron Works Co., Manistee, Mich.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.
- CONDUITS (Electric, Interior, Steel.)**
Western Electric Co., New York, N. Y.
Youngstown Sheet & Tube Co., Youngstown, Ohio.
- CONTRACTORS (Bridge.)**
Hardaway Contracting Co., Columbus, Ga.
Kansas City Bridge Co., Kansas City, Mo.
Snare Corp., Frederick, New York, N. Y.
- (Drainage and Dredging.)**
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York
- (Electrical.)**
Virginia Engineering Co., Inc., Newport News, Va.
Walker Electrical Co., Atlanta, Ga.
Warner Service Co., Knoxville, Tenn.
Webb Electric Co., Anderson, S. C.
- (Foundations and Dams.)**
Snare Corp., Frederick, New York, N. Y.
- (General.)**
Blair, Algernon, Montgomery, Ala.
Burkes, Inc., J. V. & E. T., New Orleans.
Cornell Young Co., Inc., Macon, Ga.
Cowper Co., Inc., John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Saville, Inc., Allen J., Richmond, Va.
- Smallman-MacQueen Construction Co., Birmingham.**
Snare Corp., Frederick, New York, N. Y.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Lorton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
- (Industrial Buildings.)**
Blair, Algernon, Montgomery, Ala.
Cowper Co., Inc., John W., Richmond, Va.
Fiske-Carter Constr. Co., Greenville, S. C.
Lockwood Greene Engrs., Inc., Boston.
Smallman-MacQueen Construction Co., Birmingham.
Snare Corp., Frederick, New York, N. Y.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Lorton, Charlotte, N. C.
Virginia Engineering Co., Inc., Newport News, Va.
White Engineering Corp., J. G., New York.
- Mill Village.**
Hornbuckle Contracting Co., Atlanta, Ga.
- (Power Piping.)**
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Poe Piping & Heating Co., Greenville, S. C.
- (Power Plants.)**
Snare Corp., Frederick, New York, N. Y.
Virginia Engineering Co., Inc., Newport News, Va.
- (Railroad.)**
Cornell-Young Co., Inc., Macon, Ga.
- (Reinforced Concrete.)**
Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Gunite Comp. & Constr. Co., Kansas City.
Tucker & Lorton, Charlotte, N. C.
- (Road and Street Paving.)**
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrary Co., J. B., Atlanta, Ga.
Virginia Engineering Co., Inc., Newport News, Va.
- (Sewerage and Waterworks.)**
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrary Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. Y.
Tucker & Lorton, Charlotte, N. C.
Virginia Engineering Co., Inc., Newport News, Va.
- (Sprinkler System.)**
Poe Piping & Heating Co., Greenville, S. C.
- Machinery and Supplies.**
(Used.)
Adams Mch. Co., T. G., Savannah, Ga.
Lima Excavator Sales Agency, Lima, Ohio.
Marine Metal & Supply Co., New York.
- CONTRACT WORK WANTED.**
(See following classifications:)
Boiler and Tank Work.
Castings.
Forgings.
Foundries and Machine Shops.
Machinery (Special).
Ornamental Iron Work.
Patterns.
Sheet Metal Work.
Structural Steel and Iron.
Welding Plants.
- CONVEYING AND ELEVATING MACHINERY.**
Barber-Greene Co., Aurora, Ill.
Fairfield Engr. Co., Marion, Ohio.
Universal Crusher Co., Cedar Rapids, Ia.
- CONVEYORS (Portable, Power-Driven.)**
Clark Tractor Co., Battle Creek, Mich.
Fairfield Engr. Co., Marion, Ohio.
- COOLING AND HEATING UNITS (Fan.)**
Niagara Blower Co., New York, N. Y.
- COTTON GIN MACHINERY.**
Continental Gin Co., Birmingham, Ala.
- COUPLINGS.**
Golden Fdy. & Mch. Co., Columbus, Ga.
- (Flexible.)**
Diamond Chain & Mfg. Co., Indianapolis, Ind.
- CRANES**
Industrial Brownhoist Corp., Cleveland, O.
National Equipment Co. (Inley, Koching, Parsons), Milwaukee, Wis.
- Northwest Engineering Co., Chicago, Ill.**
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Cantilever, Gantry.)**
Bedford Foundry & Machine Co., Bedford, Ind.
- (Crawler.)**
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Crawling Tractor.)**
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Electric Traveling.)**
Bedford Foundry & Machine Co., Bedford, Ind.
Harnischfeger Corp., Milwaukee, Wis.
- (Full Circle Steam and Electric.)**
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Gasoline.)**
Harnischfeger Corp., Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Locomotive.)**
Bucyrus-Erie Co., So. Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
- (Material Handling.)**
Bay City Shovels, Inc., Bay City, Mich.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Crane Co., Lorain, Ohio.
- (Traveling Hand Power.)**
Wright Mfg. Co., Bridgeport, Conn.
- CRAWLERS (Tractor.)**
Trackson Co., Milwaukee, Wis.
- CREOSOTED MATERIALS.**
Amer. Creosote Wks., Inc., New Orleans.
Atlantic Creosoting Co., Norfolk, Va.
- CREOSOTED TIMBER.**
Ayer & Lord Tie Co., Chicago, Ill.
Brown Wood Preserving Co., Louisville, Ky.
- CREOSOTE OIL.**
Amer. Creosote Wks., Inc., New Orleans.
Ayer & Lord Tie Co., Inc., Chicago.
- CREOSOTING (Wood Material.)**
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Atlantic Creosoting Co., Norfolk, Va.
Brown Wood Preserving Co., Louisville, Ky.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.
- CROSS-ARMS (Creosoted.)**
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Atlantic Creosoting Co., Norfolk, Va.
- (Kimo Meta Arsenite Treated.)**
Curtin-Howe Corp., New York, N. Y.
- CROSS-TIES (Creosoted.)**
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Atlantic Creosoting Co., Norfolk, Va.
Ayer & Lord Tie Co., Inc., Chicago.
Eppinger & Russell Co., New York, N. Y.
- (Kimo Meta Arsenite Treated.)**
Curtin-Howe Corp., New York, N. Y.
- CRUSHED STONE (Road Concrete and Ballast.)**
American Limestone Co., Knoxville, Tenn.
Boxley & Co., W. W., Roanoke, Va.
- CRUSHERS (Coal and Coke.)**
Fuller Lehigh Co., Fullerton, Pa.
Steward Machine Co., Chas. C., Birmingham, Ala.
- (Rock.)**
Diamond Iron Works, Minneapolis, Minn.
Universal Crusher Co., Cedar Rapids, Ia.
- CRUSHING and Pulverizing Machinery.**
Able-Chalmers Mfg. Co., Milwaukee, Wis.

Day Pulverizer Co., Knoxville, Tenn.
Diamond Iron Works, Minneapolis, Minn.
Fuller Lehigh Co., Fullerton, Pa.
Raymond Bros. Impact Pulverizer Co.,
Chicago, Ill.
Traylor Engr. & Mfg. Co., Allentown, Pa.
Universal Crusher Co., Cedar Rapids, Ia.

CULVERT PIPE (Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
National Cast Iron Pipe Co., Birmingham.
U. S. Pipe & Foundry Co., Burlington, N.J.

—(Corrugated Metal.)

American Sheet & Tin Plate Co., Pitts-
burgh, Pa.

CURB PROTECTORS. (Steel Bar.)

Truscon Steel Co., Youngstown, Ohio.

CYLINDERS (Compressed Air, Gas.)

National Tube Co., Pittsburgh, Pa.

—(Creosoting.)

Alco Products, Inc., New York, N. Y.

DAMP-PROOFING.

Headley Emulsified Products Co., Phila-
delphia, Pa.

DESKS (School.)

Andrews Co., A. H., Chicago, Ill.

DITCHING MACHINERY.

Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.

DOORS (Bronze.)

Michaels Art Bronze Co., Covington, Ky.

—(Fire.)

Merchant & Evans Co., Philadelphia, Pa.

—(Fireproof, Air Chamber.)

Wilson Corp., The J. G., New York.

—Revolving.

Michaels Art Bronze Co., Covington, Ky.

—(Rolling, Steel and Wood.)

Wilson Corp., The J. G., New York.

—(Steel.)

Truscon Steel Co., Youngstown, Ohio.

—(Tubular Steel.)

Bayley Co., Wm., Springfield, O.

—(Vault.)

York Safe & Lock Co., York, Penna.

DRAFTSMEN'S SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

DREDGE EXCAVATORS.

Bucyrus-Erie Co., So. Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
National Equipment Corp. (Kochring, In-
sley) Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

DREDGES (Dipper, Elevator, Hydraulic.)

Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., So. Milwaukee, Wis.

DREDGING (River and Harbor Improvement.)

Armedal Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

DRILLING CONTRACTORS.

Kennedy-Bleeker Drilling Co., New York
City.
Mott Ore Drilling Co., Huntington, W. Va.

Myers & Sons, J. L., Denton, Texas.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saltville, Va.
Sprague & Hanwood, Inc., Scranton, Pa.

DRILLS (Oil and Artesian Well)

Virginia Machinery & Well Co., Inc.
Richmond, Va.

DRINKING FOUNTAINS.

Bundle-Spence Mfg. Co., Milwaukee, Wis.

DROP-FORGING MACHINERY

Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.)

Ripley Fdy. & Mch. Co., Ripley, Ohio.

DRY KILNS and Equipment.

Moore Dry Kiln Co., Jacksonville, Fla.

DRYING MACHINERY.

Chicago Bridge & Iron Wks., Birmingham.

DUST-PROOFING (Concrete.)

Sonneborn Sons, Inc., L., New York

**DYNAMITE (Industrial and Ag-
ricultural.)**

Du Pont De Nemours & Co., Inc., E. I.
Wilmington, Del.

ECONOMIZERS (Fuel.)

Babcock & Wilcox Co., New York.

**ELECTRICAL Instruments and
Supplies.**

General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.

**—Machinery (Generators, Mo-
tors, etc., New.)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Rockford Power Machy. Co., Rockford, Ill.
Westinghouse Electric & Mfg. Co.,
Pittsburgh, Pa.

**—Machinery (Generators, Mo-
tors, etc., Used.)**

Delta Equipment Co., Philadelphia, Pa.
Electric Service Co., Cincinnati, Ohio.
General Electric Co., Schenectady, N. Y.
O'Brien Machinery Co., The, Phila. Pa.
Randle Machinery Co., The, Cincinnati, O.
Rockford Power Machy. Co., Rockford, Ill.

**—Machinery Repairing (Mo-
tors, Generators, etc.)**

Electric Service Co., Cincinnati, Ohio

ELECTRIC LIGHTING.

Westinghouse Lamp Co., New York City

**ELECTRIC SHOVELS (See
Shovels.)****ELEVATORS (Electric.)**

American Elevator & Machine Co., Inc.
Louisville, Ky.
Miller Co., St. Louis, Mo.

—(Hand and Belt Power.)

American Elevator & Machine Co., Inc.
Louisville, Ky.
Miller Co., St. Louis, Mo.

—(Hydraulic.)

American Elevator & Machine Co., Inc.
Louisville, Ky.

ENGINEERS (Airports.)

Lockwood Greene Engrs., Inc., New York
MacEwen & Crandall, Inc., Cambridge,
Mass.
Shaw Co., Russell B., St. Louis, Mo.

—(Appraisal.)

Lockwood Greene Engrs., Inc., New York
Main, Inc., Chas. T., Boston, Mass.
May, Inc., Geo. S., Chicago, Ill.

THE NATIONAL STANDARD "ALMETL" TRADE MARK REG. U.S. PAT. OFF. FIRE DOORS COVER THE COUNTRY

16 YEAR RECORD WITHOUT
FAILURE IN FIRE OR SERVICE
HIGHEST QUALITY—LOWEST COST
GUARANTEED TWENTY YEARS



MANUFACTURED BY

Merchant & Evans Co.
Philadelphia, Pa.

AMERICAN ELEVATORS PASSENGER AND FREIGHT AMERICAN ELEVATOR and MACHINE CO., INC. Established in 1898 LOUISVILLE, KENTUCKY

ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each

Quantity Production A Specialty

Nickel, Chrome and Other Alloy

Quick Delivery

Inquiries Solicited

CRUCIBLE STEEL CASTING COMPANY
LANSDOWNE, DELAWARE COUNTY, PA.

Manufacturers Of

ELECTRIC AND
HAND POWER

ELEVATORS

FREIGHT AND
PASSENGER

DUMB WAITERS

MILLNER COMPANY

St. Louis, Mo.

BRICK—CHIMNEYS—CONCRETE

BOILER BRICKWORK

The Rust Engineering Co.

Engineers and Contractors

BIRMINGHAM, ALABAMA

PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO

Sanderson & Porter, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York

Whitman, Requaardt & Smith, Balto., Md.
Wiedeman and Singleton, Inc., Atlanta.

—(Aviation.)

Shaw Co., Russell B., St. Louis, Mo.

—(Bridge.)

Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ga.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Southern Erectors, Inc., Tampa, Fla.
Steel & Leiby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H., Minneapolis, Minn.
Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Chemical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Dow & Smith, New York, N. Y.
Moss, Jr., W. Wade, Columbus, Ga.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.

—(Civil.)

Charlton & Davis, Ft. Lauderdale, Fla.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Steel & Leiby, Knoxville, Tenn.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Consulting.)

Barstow & Co., W. S., New York City.
Charlton & Davis, Ft. Lauderdale, Fla.
Converse & Co., J. B., Mobile, Ala.
Cramer, Robert, Milwaukee, Wis.
Engineering Service Corp., Houston, Tex.
Goder, Joseph, Chicago, Ill.
Harrub Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Smith, Elroy G., Augusta, Ga.
Stillman & Van Stien, New York, N. Y.
United Engineers & Constructors, Phila.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.
Wiley & Wilson, Lynchburg, Va.

—(Cost.)

Ernst & Ernst, New York, N. Y.
May, Inc., Geo. S., Chicago, Ill.

—(Dams.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Byllesby Engineering and Management Corp., Chicago, Ill.
Gardner & Howe, Memphis, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sirrins & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
Wheeler, Walter H., Minneapolis, Minn.
White Engineering Corp., J. G., New York.
Wiley & Wilson, Lynchburg, Va.

—(Drainage and Irrigation.)

Cramer, Robert, Milwaukee, Wis.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.

—(Efficiency.)

Ernst & Ernst, New York, N. Y.
Whitman, Requaardt & Smith, Balto., Md.

—(Electrical.)

Engineering Service Corp., Houston, Tex.
Hoosier Engineering Co., Chicago, Ill.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.
Webb Electric Co., Anderson, S. C.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

—(Electric-Light and Power Plants.)

Barstow & Co., W. S., New York City.
Byllesby Engineering and Management Corp., Chicago, Ill.
Cramer, Robert, Milwaukee, Wis.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
Tucker & Laxton, Charlotte, N. C.

White Engineering Corp., J. G., New York.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

—(Flood Control.)

Harrub Engineering Co., Chicago.

—(Gas.)

Byllesby Engineering and Management Corp., Chicago, Ill.
Huey, S. E., Monroe, La.

—(Geological.)

De Kalb, Courtenay, New York City.
Froehling & Robertson, Richmond, Va.
Moss, Jr., W. Wade, Columbus, Ga.
Wadleigh & Bailey, Washington, D. C.

—(Harbor Improvements.)

Engineering Service Corp., Houston, Tex.

—(Heating.)

Wiley & Wilson, Lynchburg, Va.

—(Hydraulic.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Harrub Engineering Co., Chicago.
Main, Inc., Chas. T., Boston, Mass.
Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Hydro-electric.)

Alpaugh & Sons, Chas. W., Manassas, Va.
Barstow & Co., W. S., New York City.
Byllesby Engineering and Management Corp., Chicago, Ill.
Harrub Engineering Co., Chicago.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
Sirrins & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Ice and Refrigerating.)

Engineering Service Corp., Houston, Tex.

—(Industrial Plants.)

Barstow & Co., W. S., New York City.
Consoer, Older & Quinlan, Inc., Chicago.
Converse & Co., J. B., Mobile, Ala.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hills Co., George B., Jacksonville, Fla.
Lockwood Greene Engrs., Inc., New York.
MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Prescher & Co., Inc., G. Lloyd, Atlanta.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
Sirrins & Co., J. E., Greenville, S. C.
Smith, Elroy G., Augusta, Ga.
Turner, C. A. P., Minneapolis, Minn.
United Engineers & Constructors, Phila.
Wiley & Wilson, Lynchburg, Va.

—(Industrial Survey.)

Converse & Co., J. B., Mobile, Ala.
Lockwood Greene Engrs., Inc., New York.
Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.)

Barrow-Agee Laboratories, Memphis, Tenn.
Comard, William E., Burlington, N. J.
Cramer, Robert, Milwaukee, Wis.
Dow & Smith, New York, N. Y.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Moss, Jr., W. Wade, Columbus, Ga.
Picard Laboratories, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh, Pa.
Southwestern Laboratories, Ft. Worth, Tex.

—(Lighting.)

Byllesby Engineering and Management Corp., Chicago, Ill.
Westinghouse Lamp Co., New York City.
Wiley & Wilson, Lynchburg, Va.

—(Mechanical.)

Charlton & Davis, Ft. Lauderdale, Fla.
Engineering Service Corp., Houston, Tex.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Moigs, Bassett & Slaughter, Phila., Pa.
Sanderson & Porter, New York, N. Y.
Wiley & Wilson, Lynchburg, Va.

—(Mining. See Engineers, Geological.)

—(Municipal.)

Consoer, Older & Quinlan, Inc., Chicago.
Dow & Smith, New York, N. Y.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Knowles, Inc., Morris, Pittsburgh, Pa.
McCrary Co., The J. B., Atlanta, Ga.
White Co., Gilbert C., Durham, N. C.
Wiley & Wilson, Lynchburg, Va.

—(Paving and Roads.)

Dow & Smith, New York, N. Y.
Freeland, Roberts & Co., Nashville, Tenn.

Harrub Engr. Co., C. N., Nashville, Tenn.
White Co., Gilbert C., Durham, N. C.

—(Printing and Newspaper Plants.)

Lockwood Greene Engrs., Inc., New York.

—(Production.)

Scotfield Engineering Co., Philadelphia.

—(Public Service Properties.)

Barstow & Co., W. S., New York City.
Byllesby Engineering and Management Corp., Chicago, Ill.
Knowles, Inc., Morris, Pittsburgh, Pa.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scotfield Engineering Co., Philadelphia.
White Engineering Corp., J. G., New York.

—(Railroad.)

Huey, S. E., Monroe, La.

—(Reinforced Concrete Bridges, Buildings, etc.)

Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Steel & Leiby, Knoxville, Tenn.
Tucker & Laxton, Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
Wheeler, Walter H., Minneapolis, Minn.

—(Sales Analysis.)

May, Inc., Geo. S., Chicago, Ill.

—(Sanitary.)

Cramer, Robert, Milwaukee, Wis.
Harrub Engineering Co., Chicago.
Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Sewage Disposal Plants.)

Cramer, Robert, Milwaukee, Wis.
McCrory Co., The J. B., Atlanta, Ga.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta.
Wiley & Wilson, Lynchburg, Va.

—(Sewerage and Waterworks.)

Comard, William E., Burlington, N. J.
Consoer, Older & Quinlan, Inc., Chicago.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Knowles, Inc., Morris, Pittsburgh, Pa.
Sanderson & Porter, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New York.
Whitman, Requaardt & Smith, Balto., Md.
Wiedeman & Singleton, Inc., Atlanta, Ga.
Wiley & Wilson, Lynchburg, Va.

—(Structural.)

Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l Park, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Huey, S. E., Monroe, La.
Lockwood Greene Engrs., Inc., New York.
Southern Erectors, Inc., Tampa, Fla.
Turner, C. A. P., Minneapolis, Minn.
United Engineers & Constructors, Phila.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitman, Requaardt & Smith, Balto., Md.

—(Textile Mills.)

Lockwood Greene Engrs., Inc., New York.
Main, Inc., Chas. T., Boston, Mass.
Sirrins & Co., J. E., Greenville, S. C.

—(Transmission Lines.)

Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.)

Wiley & Wilson, Lynchburg, Va.

—(Water Supply.)

Whitman, Requaardt & Smith, Balto., Md.
Wiley & Wilson, Lynchburg, Va.

—(Engines (Compressed Air.)

Dake Engine Co., Grand Haven, Mich.

—(Diesel Type.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Gas and Gasoline.)

Sterling Engine Co., Buffalo, N. Y.

—(Marine.)

Fairbanks, Morse & Co., Chicago, Ill.

—(Oil.)

Continental Gas Co., Birmingham, Ala.

—(Steam.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Lombard Iron Works & Supply Co., Augusta, Ga.
Schubert's Sons Co., J. S., Mass., Ga.

—(ENVELOPES.)

Young & Selden Co., Baltimore, Md.

—(ESTIMATORS (Building & Construction.)

Martin, Joe B., Charlotte, N. C.

—(EXCAVATING MACHINERY.)

Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., So. Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland.
National Equipment Corp. (Kochring, Insley, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

—(EXCAVATORS (Clamshell and Orange Peel.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., Lorain, Ohio.

—(Dragline. See Dragline Excavators.)

—(Trench.)

Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Bucyrus-Erie Co., So. Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
Ohio Power Shovel Co., Lima, Ohio.

—(EXPANSION JOINTS (Road and Street.)

Carey Co., Philip, Lockland, Cincinnati, Ohio.

—(EXPLOSIVES.)

De Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

—(FACTORY Management Systems.)

Ernst & Ernst, New York, N. Y.

—(FEED-WATER HEATERS and Purifiers.)

American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.

—(FENCE POSTS (Crossed.)

American Crosscutting Co., Louisville, Ky.
Ayer & Lord Tie Co., Chicago, Ill.

—(FENCING Entrance Gates (Iron, Steel and Wire.)

American Steel and Wire Co., Balto., Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

—(Field and Industrial, Wire Weaving.)

American Steel and Wire Co., Balto., Md.
Cyclone Fence Co., Waukegan, Ill.
Gulf States Steel Co., Birmingham, Ala.

—(FERTILIZER MACHINERY.)

Raymond Bros., Impact Pulv. Co., Chicago.

—(FILTER (For Domestic and Industrial Purposes.)

American Water Softener Co., Phila., Pa.
Bacharach & Co., E. W., Kansas City, Mo.
International Filter Co., Chicago, Ill.
Roberts Filter Mfg. Co., Darby (Pa.), Pa.

—(Cloth.)

Newark Wire Cloth Co., Newark, N. J.

—(FINANCING.)

Electric Bond & Share Co., New York.
Gay & Co., W. O., New York, N. Y.

—(FIREPROOF Building Material.)

Bannon Pipe Co., Louisville, Ky.

—Doors and Shutters.

Wilson Corp., The J. G., New York City.

FITTINGS (Wire Rope.)American Steel & Wire Co., Chicago, Ill.
Boehling's Sons Co., John A., Trenton, N. J.**FLANGES (Iron and Steel.)**Amer. Cast Iron Pipe Co., Birmingham.
Dart Mfg. Co., E. E., Providence, R. I.
National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.**—(Swivel.)**

Merco Nordstrom Valve Company, San Francisco, Cal.

FLOOR (Asphalt Mastic.)

Barber Asphalt Co., Philadelphia, Pa.

—(Cork Composition.)

Congoleum-Nairn, Inc., Kearny, N. J.

—(Hardwood, Maple, Oak.)

Kirby Lumber Co., Houston, Tex.

—(Linooleum.)

Congoleum-Nairn, Inc., Kearny, N. J.

—(Northern Hard Maple.)

Holt Hardwood Co., Oconto, Wis.

—(Open Steel.)Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.**—Covering.**

Congoleum-Nairn, Inc., Kearny, N. J.

—Hardener (Concrete.)

Sommerborn Sons, Inc., L., New York.

—Plates and Stair Treads.

Central Iron & Steel Co., Harrisburg, Pa.

—Wax.

Congoleum-Nairn, Inc., Kearny, N. J.

FLUMES.

Alco Products, Inc., New York, N. Y.

FLUSH-TANK SIPHONS.

Pacific Flush-Tank Co., New York, N. Y.

FORMED PRODUCTS (Roofing.)

American Rolling Mill Co., Middletown.

FORMS, Steel (For Concrete Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)

Blaw-Knox Co., Pittsburgh, Pa.

FOUNDRIES and Machine Shops.General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Mountain State Steel Foundries, Parkersburg, W. Va.
Richmond Foundry & Mfg. Co., Richmond, Va.
Savannah Machine & Fdry. Co., Savannah.**FOUNDRY Equipment and Supplies.**

Hill & Griffith Co., Cincinnati, O.

—Facings (Tale and Soapstone.)

Hill & Griffith Co., Cincinnati, O.

FURNACES (Industrial.)

Combustion Engr. Corp., New York City.

—(Water-Cooled.)Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.**GALVANIZED Products.**Bessemer Galvanizing Works, Birmingham, Ala.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Joe. P., Philadelphia, Pa.**—Steel and Iron.**American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.**GALVANIZING (Cadmium Plating.)**

Birmingham Galvanizing Co., Birmingham, Ala.

—(Hot Dip.)Bessemer Galvanizing Works, Birmingham.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Joe. P., Philadelphia, Pa.
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.**GAS HOLDERS.**Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.**—Producers.**

Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE.

Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)**GATES.**

Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

GEARS.DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Philadelphia, Pa.
General Electric Co., Schenectady, N. Y.**—(Worm Reduction.)**

DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.**—(Used.)**O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.**GEOLOGISTS. (See Engineers, Geological.)****GLASS (Art.)**

Hires Turner Glass Co., Philadelphia, Pa.

—(Plate.)Hires Turner Glass Co., Philadelphia, Pa.
Southwestern Sheet Glass Co., Okmulgee, Okla.**—(Window.)**Hires Turner Glass Co., Philadelphia, Pa.
Pittsburgh Plate Glass Co., Pittsburgh.
Southwestern Sheet Glass Co., Okmulgee, Okla.**—(Wire.)**Hires Turner Glass Co., Philadelphia, Pa.
Southwestern Sheet Glass Co., Okmulgee, Okla.**GRADERS (Elevating.)**Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., Peoria, Ill.**—(One Man Motor.)**

Adams Co., J. D., Indianapolis, Ind.

—(Leaning Wheel Road.)

Adams Co., J. D., Indianapolis, Ind.

GRAPHITE.

Dixon Crucible Co., Jos., Jersey City, N. J.

GRATES and Grate Bars.

Schofield's Sons Co., J. S., Macon, Ga.

Water Purification Plants*Any Type—Any Purpose—Any Capacity*Dry Chemical Feed Machines
Swimming Pool Filters**E. W. BACHARACH & CO.**

Rialto Bldg.

Kansas City, Mo.

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY

604 Columbia Avenue

Darby, Pennsylvania

EARLE

Cut Spur, Bevel, Herringbone, and Worm Gears

All sizes. Every description. Operating Machinery for Bridges, etc. "Lea Simpler" Cold Metal Saws.

The Earle Gear & Machine Co.

4719 Stenton Avenue,

Philadelphia, Pa.

110 State St., Boston, Mass.

95 Liberty St., New York City

GEARS**CONTRACT MACHINE WORK**

Parts and Complete Machines

Heat Treating and Grinding

Mail Blue Prints for Quotations

GENERAL MACHINE WORKS

YORK, PA.

**JOINTITE**

WATERTIGHT SEWER PIPE JOINT COMPOUND

Also Miller Flush Tank Siphons, Automatic Sewage Ejectors, Convertible Diaphragm-Plunger Pumps, Sewage Disposal Apparatus.

PACIFIC FLUSH-TANK CO.

Write nearest office for catalog interested in.

4241 Ravenswood Ave.
CHICAGO136 Liberty Street
NEW YORK**CLEAN, PRECISE CASTINGS**

IRON, BRASS, BRONZE, ALUMINUM AND ALLOYS.

QUANTITY PRODUCTION. CONTRACT WORK.

The RICHMOND
FOUNDRY & MANUFACTURING CO. Inc.

Richmond

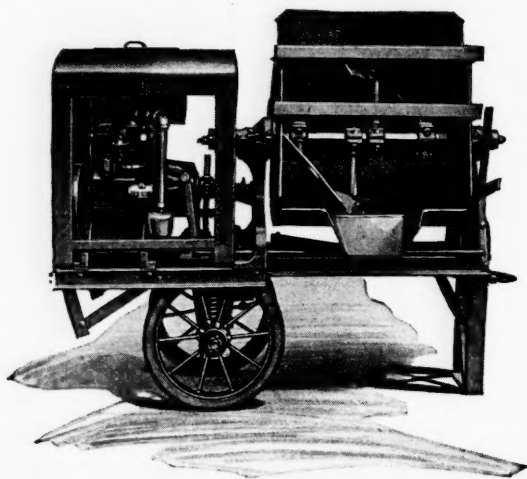
Virginia

MODERN MACHINE and PATTERN SHOPS.

"A Dependable Source of Supply"

PLASTER - MORTAR - CONCRETE

Mixed in a

**BLYSTONE
THRU A DOOR****BETTER and CHEAPER****HAND MIXING DOES NOT PAY**

It no longer pays to mix Plaster, Mortar or Concrete by hand. Blystone Thru-A-Door does it so much **BETTER** as well as **CHEAPER**. One Operator with a Blystone Thru-A-Door can do the work of **SEVERAL** men hand mixing and obtain a better mix. Mixing can be done on any part of the job inside or outside, because a Thru-A-Door can be moved from floor to floor.

USE FOR TEN DAYS AT OUR RISK

Why don't you use one for 10 days at our risk and let it sell itself before you buy? If it does not come up to your expectations, you may return to us without cost to you.

*Write for Details***BLYSTONE MANUFACTURING CO.**

631 Record Street Cambridge Springs, Pa.

STEEL PLATEWORK*Every description of fabricated steel*TANKS—RECEIVERS—CHUTES—TRAYS—ORE BINS
DREDGE PIPE—SMOKE STACKS—BREECHINGS*Electric and acetylene welding and cutting.*

GRATING (Area, Flooring, Sidewalk.)
Blaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The, Baltimore, Md.
Boxley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.
Georgia Sand & Gravel Co., Augusta, Ga.

GREASE CUPS.
Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Gypsum, Limestone, etc.)
Raymond Bros. Impact Pulv. Co., Chicago.

—Wheels.
Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.
Du Pont de Nemours & Co., Inc., E. I., Wilmington, Del.

GUNS (Hydraulic.)
Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Ingalls Iron Works, Birmingham, Ala.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic Gulf & Pacific Co., New York.

HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEAT EXCHANGERS.
Alco Products, Inc., New York, N. Y.

HEATING Apparatus (Engineers and Contractors.)
Poe Piping & Heating Co., Greenville, S. C.

HOISTS (Chain.)
Wright Mfg. Co., Bridgeport, Conn.

—(Electric.)
Harnischfeger Corp., Milwaukee, Wis.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Gasoline.)
Dake Engine Co., Grand Haven, Mich.
National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.
Street Bros. Mch. Wks., Chattanooga, Tenn.

—(Steam.)
Dake Engine Co., Grand Haven, Mich.
Street Bros. Mch. Wks., Chattanooga, Tenn.

HOOPS, Bands, etc. (Galvanized.)
Connors Steel Co., Birmingham, Ala.

HOPPERS (Aggregate, Measuring and Weighing.)
Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukegan, Wis.

HOTELS.
Heiss Hotel Systems, St. Louis, Mo.
Southern Hotel, The, Baltimore, Md.

HOUSE MOVING.
Nichley, Jr., Co., John, Pittsburgh.

HUMIDIFYING AND DRYING EQUIPMENT.
Niagara Blower Co., New York, N. Y.

HYDRANTS (Fire.)
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Myers & Bro. Co., The, F. E., Ashland, O.
Wood & Co., E. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.)
Alabama Power Co., Birmingham, Ala.
Crisp County Power Commission, Cordele, Ga.
Georgia Power Co., Atlanta, Ga.
Texas Power & Light Co., Dallas, Texas.

INCINERATORS
Goder, Joseph, Chicago, Ill.

INCORPORATORS.
Delaware Registration Trust Co., Wilmington, Del.

INSULATING BOARD.
Armstrong Cork & Insulation Co., Lancaster, Pa.
United Cork Companies, Lyndhurst, N. J.

—Materials.
General Electric Co., Schenectady, N. Y.

—Quilt.
Cabot, Inc., Samuel, Boston, Mass.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York
Gay & Co., W. O., New York City.
Hanchett Bond Co., Inc., The, Chicago, Ill.
Nuveen & Co., John, Chicago.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
Whiting & Co., Inc., P. H., New York City.

IRON.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(Ingot, For Culverts, etc.)
American Rolling Mill Co., Middletown, O.

JAIL CELLS
Roanoke Iron & Bridge Wks., Roanoke, Va.

JOINTS (Pipe.)
Leadite Co., Philadelphia, Pa.

KETTLES (Pavers and Roofers.)
Honhorst Co., Jos., Cincinnati, O.

KILNS (Cement.)
Alco Products, Inc., New York, N. Y.

—(Drying Lumber.)
Moore Dry Kiln Co., Jacksonville, Fla.

LADDERS (Rolling.)
Myers & Bro. Co., The, F. E., Ashland, O.

LAMPS (Incandescent.)
Western Electric Co., New York City.
Westinghouse Lamp Co., New York City.

LATHES.
Sebastian Lathe Co., Cincinnati, Ohio.

LIGHTING (Factory and Mill.)
Westinghouse Lamp Co., New York City

—Fixtures (Electric.)
Western Electric Co., New York City
Westinghouse Lamp Co., New York City

LIGHTS (Contractors.)
Toledo Pressed Steel Co., Toledo, Ohio.

LININGS (Flue, Fire Clay.)
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.

—(Tube Mill.)
Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Embossed Inlaid, Inlaid, Jaspé.)
Congoleum-Nairn, Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.
Smith & Son Co., Oscar T., Baltimore, Md.
Young & Selden Co., Baltimore, Md.

LOADING and UNLOADING MACHINERY (Portable.)
Barber-Greene Co., Aurora, Ill.
Northwest Engineering Co., Chicago, Ill.

LOCOMOTIVES (Compressed Air.)
Porter Co., H. K., Pittsburgh, Pa.

—(Wireless Stored Steam.)
Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)
Porter Co., H. K., Pittsburgh, Pa.

—(Industrial.)
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.

—(Mining.)
Porter Co., H. K., Pittsburgh, Pa.

—(Railway.)
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.

LUBRICANTS.
Dixon Crucible Co., Jos., Jersey City, N. J.
Gulf Refining Co., Pittsburgh, Pa.

LUBRICATORS (Force Feed.)
Lunkenheimer Co., The, Cincinnati, O.

LUMBER (Ceiling, Flooring, Siding.)
Jackson Lumber Co., Lockhart, Ala.
Kirby Lumber Co., Houston, Texas.

—(Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Atlantic Creosoting Co., Norfolk, Va.
Ayer & Lord Tie Co., Inc., Chicago.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.

—Hardwoods, Cypress, etc.)
Reynolds Bros. Lbr. Co., Albany, Ga.

—(Heavy Construction, Pitch, Pine, etc.)
Kirby Lumber Co., Houston, Texas.
Reynolds Bros. Lbr. Co., Albany, Ga.

—(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

MACHINERY (Special.)
Bliss Co., E. W., Brooklyn, N. Y.
Earle Gear & Machine Co., Phila., Pa.
Fernalda Machinery Co., St. Louis, Mo.
General Machine Works, York, Pa.

—and Supplies (New and Used.)
Adams Mch. Co., T. G., Savannah, Ga.
Electric Service Co., Cincinnati, Ohio.
Marine Metal & Supply Co., New York.
O'Brien Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Zelicker Supply Co., W. A., St. Louis.

MACHINE TOOLS
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Sebastian Lathe Co., Cincinnati, Ohio.

—(Used.)
Delta Equipment Co., Philadelphia, Pa.
O'Brien Machinery Co., Philadelphia, Pa.

MAIL CHUTES.
Cutler Mail Chute Co., Rochester, N. Y.

MAINTAINERS (Road.)
Adams Co., J. D., Indianapolis, Ind.

MARBLE (Producers and Manufacturers.)
Georgia Marble Co., The, Tate, Ga.

MATERIAL ELEVATORS.
National Equipment Corp. (Insley, C. H., & E.), Milwaukee, Wis.

METAL-Cutting Machinery.
Earle Gear & Machine Co., Phila., Pa.

—Working Machinery.
Bliss Co., E. W., Brooklyn, N. Y.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.

MILL MACHINERY and SUPPLIES.
Lombard Iron Works & Supply Co., Augusta, Ga.

MIXERS.
National Equipment Corp. (Koehring, T. L. Smith, Kwik-Mix), Milwaukee, Wis.

—(Asphalt.)
Erie Machine Shops, Erie, Pa.

—(Hot.)
Koehring Co., Milwaukee, Wis.

—(Mortar.)
Chain Belt Co., Milwaukee, Wis.
Jaeger Machine Co., Columbus, Ohio.

—(Plaster.)
Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Boschert Press Co., Syracuse, N. Y.
Jaeger Machine Co., Columbus, Ohio.

MOTORS (Electric.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

MOTOR TRUCKS.
International Harvester Co. of America, Inc., Chicago, Ill.

NAILS (Cut.)
Reading Iron Co., Reading, Pa.

—and Spikes.
American Steel & Wire Co., Balto., Md.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

NATURAL GAS COMPANIES.
(Offering Industrial and Commercial Opportunities.)
Southern Natural Gas Corp., Birmingham.

NUTS (Cold Punched.)
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

OIL (Fuel and Gas.)
Gulf Refining Co., Pittsburgh, Pa.

—Cups.
Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.
Georgia Iron Works, Augusta, Ga.

ORNAMENTAL BRONZE WORK.
Heath Co., J. S., Waukegan, Ill.
Michals Art Bronze Co., Covington, Ky.

—Iron Work.
Roanoke Iron & Bridge Wks., Roanoke, Va.
Snead Architectural Iron Works, Louisville, Ky.
Southern Engineering Co., Charlotte, N. C.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.)
Palmer Asbestos & Rubber Corp., Chicago

PAINT (Metal Surfaces.)
Dixon Crucible Co., Jos., Jersey City, N. J.

—(Mill White, For Interior.)
Sonneborn Sons, Inc., L., New York.

—(Preservative.)
Cabot, Inc., Samuel, Boston, Mass.

PANELBOARDS.
Adam Electric Co., Frank, St. Louis.

PARTITIONS (Sectionfold, Rolling, Wood.)
Wilson Corp., The, J. G., New York

Creosoted Ties, Piling, Poles and Timbers

Creosote Oil

Docks for Ocean Vessels

American Creosote Works, Inc.

New Orleans, La.

Atlantic Creosoting Co., Inc.

Savannah, Ga.

Norfolk, Va.

CREOSOTED

PINE AND OAK

POLES - PILES - TIES - TIMBERS

TREATING PLANTS AND YARDS

BROWNVILLE, ALA.

LOUISVILLE, KY.

BROWN WOOD PRESERVING CO.

LOUISVILLE, KY.

SINCE 1879
MOORE
DRY KILNS
SCIENTIFIC LUMBER DRYING
MOORE DRY KILN COMPANY
NORTH PORTLAND, ORE. JACKSONVILLE, FLA.

The greatest waste of wood today occurs through insect attack and decay

ZMA pressure treated lumber can be used anywhere—in mills where excessive moisture is always present—below the ground where insects attack—in hot or cold, wet or dry conditions. ZMA is odorless, colorless and can be painted. For economy's sake avoid replacements—specify ZMA or CREOSOTE pressure treated forest products.

Our engineers will gladly give information to those interested in permanent lumber and timber.

WOOD PRESERVERS SINCE 1878
EPPINGER & RUSSELL Co

13 PARK PLACE, NEW YORK CITY
Plants—Jacksonville, Fla., and Long Island City, N. Y.



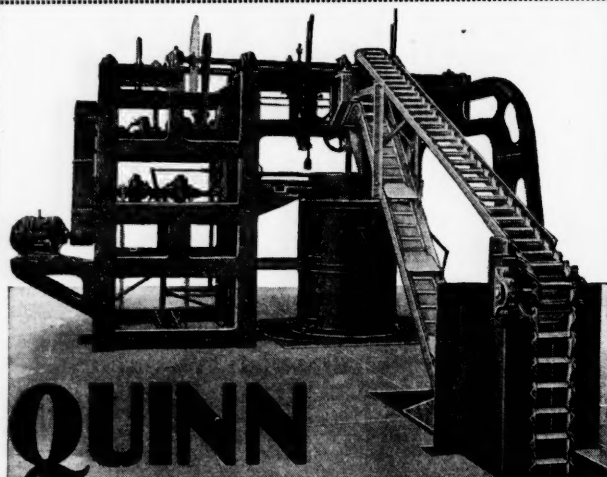
Offices in All Principal Cities.

Panelboards

are the Sign of a Better Job

Frank Adam

ELECTRIC COMPANY
ST. LOUIS



QUINN HEAVY DUTY CONCRETE PIPE MACHINE

Quality production on a quantity basis provided by two powerful tampers working just like a trip-hammer striking 300 to 400 lb. blows—370 each per minute—producing highest strength concrete in pipe known to the pipe industry.

Quinn machine made pipe exceeds the most rigid specifications and costs less to produce.

Large Sizes Only:—18" to 60" diameter—Lengths up to 72".

Quinn Wire & Iron Works
1605 12th St., Boone, Iowa.



Valuable Book FREE

Gives tables on quality standards and production costs. Complete details on Quinn machines and pictures of plants now in operation. Write for it today.

CAST IRON PIPE -AND FITTINGS-

American Cast Iron Pipe Company
Birmingham, Ala.
SALES OFFICES IN PRINCIPAL CITIES

FIRE CLAY, SEWER PIPE, FLUE LINERS and WALL COPING

Write for Catalogue and Discounts

Owensboro Sewer Pipe Co. Owensboro, Ky.

INDUSTRIAL PIPING

Power Piping Co., Pittsburgh, Pa.

**Power
Piping**
FOR EVERY INDUSTRIAL NEED

PATENT ATTORNEYS.

Buck, Sterling P., Washington, D. C.
Coleman, Watson E., Washington, D. C.
Eaton, Paul B., Charlotte, N. C.
Sassett, Edward C., Washington, D. C.
Seymour & Bright, Washington, D. C.

PATTERNS (Drawings, etc.)

Haas Pattern Co., A. W., Atlanta, Ga.

PAVING Blocks (Crescoted Wood.)

American Crescote Works, New Orleans.

—(Brick.)

National Paving Brick Mfrs. Assn., Washington, D. C.

—Mixers.

National Equipment Corp. (Koehring, W. L. Smith), Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Smith Co., S. Morgan, York, Pa.

PERFORATED METAL.

Chicago Perforating Co., Chicago, Ill.
Erdle Perforating Co., Rochester, N. Y.
Harrington & King Perf. Co., Chicago.
Hendrick Mfg. Co., Carbondale, Pa.
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.

PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

PHOSPHATE ACID.

Davidson Chemical Co., Baltimore, Md.

FIG-IRON.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

PILING (Crescoted.)

Amer. Crescote Wks., Inc., New Orleans.
Amer. Crescoting Co., Inc., Louisville.
Atlantic Crescoting Co., Norfolk, Va.
Ayer & Lord Tie Co., Inc., Chicago.

—(Steel Sheet.)

Carnegie Steel Co., Pittsburgh, Pa.
Hymen-Michaels Co., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Zelicker Supply Co., W. A., St. Louis.

—(Yellow Pine.)

Jackson Lumber Co., Lockhart, Ala.

FILLOW BLOCKS.

Golden's Fdry. & Mch. Co., Columbus, Ga.

PIPE.

Albert & Davidson Pipe Corp., Brooklyn, N. Y.
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Central Pipe & Supply Co., Charleston, W. Va.
Greenspoint Iron & Pipe Co., Inc., Brooklyn, N. Y.
Greenspon's Sons Iron & Steel Co., St. Louis, Mo.
Hudson Pipe & Supply Co., Bayonne, N. J.
Maryland Pipe & Steel Corp., Baltimore, Md.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.

—(Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
National Cast Iron Pipe Co., Birmingham, Ala.
U. S. Pipe & Fdry. Co., Burlington, N. J.

—(Dredge.)

Lancaster Iron Works, Inc., Lancaster, Pa.

—(Hammer-Welded.)

National Tube Co., Pittsburgh, Pa.

—(Iron and Steel.)

American Rolling Mill Co., Middletown.

—(Second-Hand.)

Albert & Davidson Pipe Corp., Brooklyn, N. Y.

Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.
Central Pipe & Sup. Co., Charleston, W. Va.
Greenspoint Iron & Pipe Co., Inc., Brooklyn, N. Y.
Greenspon's Sons Iron & Steel Co., St. Louis, Mo.
Hudson Pipe & Supply Co., Bayonne, N. J.
Marine Metal & Supply Co., New York.
Maryland Pipe & Steel Corp., Baltimore, Md.

—(Spiral Riveted.)

Taylor Forge & Pipe Wks., Chicago, Ill.

—(Spiral Welded.)

American Rolling Mill Co., Middletown.

—(Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Chicago Bridge & Iron Wks., Birmingham.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

—(Steel, Large Diameter.)

Alco Products, Inc., New York, N. Y.

—(Welded.)

Welded Products Co. of La., Inc., New Orleans, La.

—(Wrought Iron.)

Reading Iron Co., Reading, Pa.

—Bending Machines.

American Pipe Bending Machine Co., Boston, Mass.

—Covering (Cork.)

United Cork Companies, Lyndhurst, N. J.

—Fittings.

Amer. Cast Iron Pipe Co., Birmingham.
Georgia Iron Works, Augusta, Ga.

—Machinery (Concrete.)

Quinn Wire & Iron Works, Boone, Iowa.

—Unions and Joints.

Dart Mfg. Co., E. M., Providence, R. I.

—Systems (Industrial.)

Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
Southern Automatic Sprinkler Company, Birmingham.

PLATES (Steel.)

American Rolling Mill Co., Middletown.
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham.

POLES (Crescoted.)

Amer. Crescote Wks., Inc., New Orleans.
Amer. Crescoting Co., Inc., Louisville, Ky.
Atlantic Crescoting Co., Norfolk, Va.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.

—(Tubular, Steel.)

Bessemer Galvanizing Works, Birmingham, Ala.
National Tube Co., Pittsburgh, Pa.

—(Yellow Pine.)

Jackson Lumber Co., Lockhart, Ala.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

POSTS, (Cast Iron, Railway and Highway.)

U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

Diamond Chain & Mfg. Co., Indianapolis.
Golden's Fdry. & Mch. Co., Columbus, Ga.
Schneider's Sons Co., J. S., Macon, Ga.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City.

PRESSES, (Rolling, Cottonseed Oil, Hydraulic and Power.)
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Ripley Foundry & Machine Co., Ripley, O.

—(Metal Stamping.)
Bliss Co., E. W. Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)
Smith & Son Co., Oscar T. Baltimore, Md.
Young & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)
Wood & Co., E. D., Phila., Pa.

PULLEYS (Friction Clutch.)
Caldwell Co., Inc., W. E., Louisville, Ky.

—Shafting and Hangers.
Goldens' Fdy. & Mch. Co., Columbus, Ga.

PULVERIZED COAL EQUIPMENT.
Combustion Engr. Corp., New York, N. Y.
Fuller Lehigh Co., Fullerton, Pa.

PULVERIZERS (See Crushing and Pulverizing Machinery.)

PUMPING MACHINERY.
American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Fairbanks, Morse & Co., Chicago, Ill.
Myers & Bro. Co., The F. E., Ashland, O.
National Equipment Corp., (C. H. & E. Division), Milwaukee, Wis.
Petersburg Mchry. Pump & Well Co., Petersburg, Va.
Virginia Mchry. & Well Co., Richmond, Va.

PUMPS (Air.)
Manistee Iron Works Co., Manistee, Mich.

—(Boiler Feed.)
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Myers & Bro. Co., The F. E., Ashland, O.

—(Centrifugal.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Jaeger Machine Co., Columbus, Ohio.
La Bour Co., Elkhart, Ind.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

—(Contractors.)
Erie Pump & Engine Wks., Medina, N. Y.

—(Deep Well.)
American Well Works, Aurora, Ill.
Cook, Inc., A. D., Lawrenceburg, Ind.
Layne & Bowler, Inc., Memphis, Tenn.

—(Hydraulic.)
Dunning & Boschert Press Co., Inc., Syracuse, N. Y.

—(Power.)
American Well Works, Aurora, Ill.

—(Pulverized Coal.)
Fuller Lehigh Co., Fullerton, Pa.

—(Sand and Dredging.)
Erie Pump & Engine Wks., Medina, N. Y.
Georgia Iron Works, Augusta, Ga.

—(Steam.)
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.
Fairbanks, Morse & Co., Chicago, Ill.

—(Water Works.)
American Well Works, Aurora, Ill.
Layne & Bowler, Inc., Memphis, Tenn.
Manistee Iron Works Co., Manistee, Mich.

PUNCHING AND SHEARING MACHINERY.
Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.

RACK RAKES.
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

RADIATOR ENCLOSURES.
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

RAILINGS (Iron Pipe.)
Pipe Railing Constr. Co., Long Island City, N. Y.

RAILROAD Equipment and Supplies (New.)
Robinson & Orr, Pittsburgh, Pa.

—Equipment and Supplies (Used.)
Levis & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zelnicker Supply Co., W. A., St. Louis.

—(Frogs and Switches.)
Bethlehem Steel Co., Bethlehem, Pa.
Robinson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)
Atlanta and West Point R. R., Atlanta.
Central of Georgia Rwy., Savannah, Ga.
Model Land Company, Flagler System, St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Tennessee Central Railway, Nashville.

RAILS (New and Used.)
Carnegie Steel Co., Pittsburgh, Pa.
Hymen-Michael Co., Chicago, Ill.
Levis & Co., Henry, Philadelphia, Pa.
Perry, Buxton, Doane Co., Philadelphia.
Robinson & Orr, Pittsburgh, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlanta, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Zelnicker Supply Co., W. A., St. Louis.

RAILWAYS (Marine.)
Charleston Dry Dock and Machine Co., Charleston, S. C.

RECEPTACLES (Self-Closing — Waste Paper.)
Whittaker Paper Co., Baltimore, Md.

REFRIGERATING Machinery (See Ice and Refrigerating Machinery and Supplies.)

REINFORCING for Concrete.
American Steel and Wire Co., Balto., Md.
Carnegie Steel Co., Pittsburgh, Pa.
Connors Steel Co., Birmingham, Ala.
Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Knoxville Iron Co., Knoxville, Tenn.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Southern Engineering Co., Charlotte, N. C.
Truscon Steel Co., Youngstown, Ohio.

RIVER & HARBOR IMPROVEMENTS, (Dredging, Docks, Wharves, etc.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.
Kansas City Bridge Co., Kansas City.

RIVETS.
Russell, Burdall & Ward Bolt & Nut Co., Port Chester, N. Y.

ROAD and Street Machinery.
Adams Co., J. D., Indianapolis, Ind.
Austin-Western Road Machry. Co., Chicago.
Blaw-Knox Co., Pittsburgh, Pa.
Buffalo-Springfield Roller Co., Springfield, O.
Caterpillar Tractor Co., Peoria, Ill.
Erie Machine Shops, Erie, Pa.
Harris Co., B. W. & Leo, Minneapolis, Minn.
Huber Mfg. Co., The, Marion, Ohio.
Universal Crane Co., Lorain, Ohio.

—and Street Material.
Boxley & Co., W. W., Roanoke, Va.
Dickinson & Co., J. Q., Malden, W. Va.
Truscon Steel Co., Youngstown, Ohio.
Woodstock Slag Corp., Birmingham, Ala.

—and Street Material (Dust Laying.)
Dickinson & Co., J. Q., Malden, W. Va.

—Graders and Scrapers.
Austin-Western Road Mchry. Co., Chicago.
Caterpillar Tractor Co., Peoria, Ill.

—Oils and Preservatives.
Gulf Refining Co., Pittsburgh, Pa.

PUMP MACHINERY WELL DRILLING

Petersburg Machinery Pump and Well Co.
PETERSBURG, VA.

SAND PUMPS

A wide range of types in sizes 4" to 15"

For belt drive and for direct connection to motor

Illustrated booklet on request

GEORGIA IRON WORKS
AUGUSTA, GA.

MANISTEE CENTRIFUGAL

PUMPS

Condensers—Chemical Evaporators—Gate Valves—Hydrants

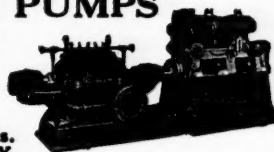
MANISTEE IRON WORKS CO.

156 Turner Ave., MANISTEE, MICHIGAN

ERIE WATER PUMPS

All types and sizes of water pumps with high efficiency and low upkeep are made by

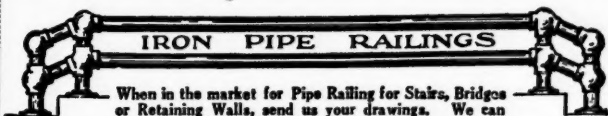
Erie Pump & Engine Wks.
154 Glenwood Ave., Medina, N. Y.



GLAMORGAN

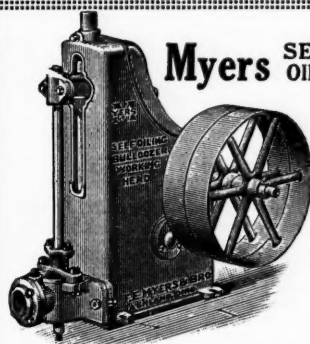
PIPE & FOUNDRY CO.

GENERAL FOUNDERS AND MACHINISTS
LYNCHBURG, VA.



When in the market for Pipe Railing for Stairs, Bridges or Retaining Walls, send us your drawings. We can quote you prices that will be worth considering.

PIPE RAILING CONSTRUCTION CO., Long Island City, New York



Myers SELF-OILING Power Pumps

When a Myers Self-Oiling Power Pump is installed there is a satisfaction in knowing that the water supply will be uniform and that the operation and maintenance costs will be cut to the minimum. Twelve sizes, operation any power, meet most requirements in domestic, agricultural, commercial and industrial fields. No. PP-61 catalog mailed, if interested.

The F. E. MYERS & BROS. CO.

ASHLAND, OHIO

Ashland Pump and Hay Tool Works

THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH

**Structural Steel Shapes, Beams,
Channels, Angles, and Ship Shapes**

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

OFFICES:

22 S. 15th St., Philadelphia 30 Church St., New York
Munsey Building, Washington 110 State St., Boston
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London**THE PHOENIX BRIDGE CO.****Engineers, Fabricators, and Erectors
Bridges and Other Structures of Steel**
CAPACITY 60,000 TONS

Works and Engineering Office: Phoenixville, Pa.

From One Source

You can secure your entire steel requirements from Bethlehem—with the assurance that each item is as good and dependable as the facilities of a completely equipped organization with years of experience can make it.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

BETHLEHEM**Bristol Steel & Iron Works, Inc.****STRUCTURAL STEEL FOR BRIDGES, BUILDINGS
AND ALL INDUSTRIAL PURPOSES****STEEL PLATE & MISCELLANEOUS IRON WORK****BRISTOL, VA.—TENN.****ROANOKE IRON & BRIDGE WORKS, Inc.****Structural and Ornamental Iron
Wrought Steel Fences****Steel Bridges****Jail Cells**

Write for Estimates

ROANOKE, VA.**BELMONT IRON WORKS**PHILADELPHIA NEW YORK EDDYSTONE
Southern Sales Offices, Charlotte, N. C.**Engineers Contractors Exporters****Structural Steel****Shop and Field Welded Steel Buildings****DIETRICH BROTHERS****Structural and Ornamental Iron and Steel Works
Large Stock of Standard and Bethlehem Shapes****CONCRETE REINFORCEMENTS****BALTIMORE, MD.****—Rollers (Steam and Gasoline.)**
Austin-Western Road Mch. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.
Erie Machine Shops, Erie, Pa.
Huber Mfg. Co., The, Marion, Ohio.**—Scarifiers.**
Austin-Western Road Mch. Co., Chicago.
Buffalo-Springfield Roller Co., Springfield, O.**ROOF INSULATION.**
Armstrong Cork & Insulation Co., Lancaster, Pa.
United Cork Companies, Lyndhurst, N. J.**ROOFING (Asphalt Built-Up.)**
Barber Asphalt Co., Philadelphia, Pa.**—(Ready Prepared, Felt, Tar, Asbestos, Asphalt.)**
Ruberoid Co., New York City.**—and Siding (Composition.)**
Ruberoid Co., New York City.**—and Siding (Metal.)**
American Rolling Mill Co., Middletown, O.
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Gulf State Steel Co., Birmingham, Ala.
Ryerson & Son, Jos. T., St. Louis and New York.
Truscon Steel Co., Youngstown, Ohio.
Youngstown Sheet and Tube Co., Youngstown, O.**—Tile, Cement (Interlocking Flat, Channel Glass.)**
Federal-American Cement Tile Co., Chicago.**—Tiles.**
Federal-American Cement Tile Co., Chicago.**RULES (Steel.)**
Lufkin Rule Co., Saginaw, Mich.**SAFES.**
York Safe & Lock Co., York, Penna.**SAND.**
Arundel Corp., Baltimore, Md.
Friend & Co., Inc., Petersburg, Va.
Georgia Sand & Gravel Co., Augusta, Ga.**SANITARY Drinking Fountains.**
Rundle-Spence Mfg. Co., Milwaukee, Wis.**SASH (Industrial.)**
Truscon Steel Co., Youngstown, Ohio.**SAWMILL Machinery.**
Schafeld's Sons Co., J. S., Macon, Ga.**SAW BIGS.**
National Equipment Corp., (C. H. & E. Division), Milwaukee, Wis.**SAWS (Cold Metal.)**
Earle Gear and Machine Co., Phila., Pa.**SCRAPERS (Drag and Wheel.)**
Adams Co., J. D., Indianapolis, Ind.
Austin-Western Road Mch. Co., Chicago.
Harris Co., B. W. & Leo, Minneapolis, Minn.**SCRAP IRON AND STEEL.**
Hunts Sons, M. J., Philadelphia, Pa.
Perry, Burton, Doane Co., Philadelphia.
Smith & Co., W. M., Birmingham, Ala.**SCREEN CLOTH.**
Seneca Wire & Mfg. Co., Fostoria, Ohio.**SCREENING (For Concrete and Road Construction.)**
American Limestone Co., Knoxville, Tenn.**SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.)**
Chicago Perforating Co., Chicago, Ill.
Diamond Iron Works, Minneapolis, Minn.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
Universal Crusher Co., Cedar Rapids, Ia.**—(Sifting.)**
Newark Wire Cloth Co., Newark, N. J.**SCREW-Machine Products.**
Progressive Mfg. Co., Torrington, Conn.**SCREWS (Machine.)**
Progressive Mfg. Co., Torrington, Conn.**SEAWALLS.**
Shore-Line Builders, Inc., Jacksonville, Fla.**SEPARATORS (Dust.)**
Raymond Bros., Impact Pulv. Co., Chicago.**SEWAGE Disposal Apparatus.**
Pacific Flush-Tank Co., New York, N. Y.**SEWER Joint Compounds.**
Leadite Co., Philadelphia, Pa.
Pacific Flush-Tank Co., New York, N. Y.**—Pipe (Vitrified.)**
Bannon Pipe Co., Louisville, Ky.
Lee Clay Products Co., Clearfield, Ky.
Owensboro Sewer Pipe Co., Owensboro, Ky.**—Pipe Machinery (Concrete.)**
Quinn Wire & Iron Works, Boone, Iowa.**SHAFTING.**
Ryerson & Sons, Inc., Jos. T., St. Louis and New York.**—Material (Tubular.)**
National Tube Co., Pittsburgh, Pa.**SHARPENING Stones.**
Carborundum Co., Niagara Falls, N. Y.**SHEET Metal Working Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
Whitney Metal Tool Co., Rockford, Ill.
Yoder Co., The, Cleveland, Ohio.**—Steel and Iron.**
American Sheet and Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Gulf States Steel Co., Birmingham, Ala.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.**SHEETS (Asbestos.)**
Ruberoid Co., New York City.**—(Galvanized and Black.)**
American Rolling Mill Co., Middletown.
American Sheet & Tin Plate Co., Pittsburgh, Pa.**SHINGLES (Asbestos.)**
Ruberoid Co., New York City.**SHIPBUILDING.**
Charleston Dry Dock & Machine Co., Charleston, S. C.
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.**SHOVELS (Steam, Gas and Electric Power.)**
Bucyrus-Erie Co., So. Milwaukee, Wis.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
National Equipment Corp., (Kochring, Insley), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.**SHUTTERS (Steel.)**
Merchant & Evans Co., Philadelphia, Pa.**SIEVES (Testing.)**
Newark Wire Cloth Co., Newark, N. J.**SIGNALS (Danger.)**
Toledo Pressed Steel Co., Toledo, Ohio.**SILICATE OF SODA.**
Grasselli Chemical Co., Inc., Birmingham.**SITES (Manufacturing.)**
Atlanta and West Point R. R., Atlanta.
Brown & Co., Chattanooga, Tenn.
Central of Georgia Rwy., Savannah, Ga.
Crisp County Power Commission, Cordele, Ga.
Danville, City of, Danville, Va.

Galveston, City of, Galveston, Texas.
Georgia Power Co., Atlanta, Ga.
Missouri-Kansas-Texas Lines, Dallas, Tex.
Model Land Company, (Flagler System),
St. Augustine, Fla.
Norfolk & Western Railway, Roanoke, Va.
Parkersburg, W. Va., Board of Com-
merce.
Reynolds Bros. Lbr. Co., Albany, Ga.
Southern Natural Gas Corp., Birmingham.
Tennessee Central Railway, Nashville.
Texas Power & Light Co., Dallas, Texas.

SLABS (Concrete Floor.)

Federal-American Cement Tile Co., Chicago.

—(Concrete Roof.)

Federal-American Cement Tile Co., Chicago.

SLAG, For Concrete.

Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.)

Woodstock Slag Corp., Birmingham, Ala.

SLINGS (Chain.)

Woodhouse Chain Works, Trenton, N. J.

—(Wire Rope.)

American Steel & Wire Co., Chicago, Ill.
Roebling's Sons Co., John A., Trenton, N. J.

SLUICE GATES AND APPLI- ANCES.

Smith Co., S. Morgan, York, Pa.

SPEED REDUCERS.

Marle Gear & Mach. Co., Phila., Pa.

SPIKES, (Railroad, Ship.)

Bethlehem Steel Co., Bethlehem, Pa.
Sweet's Steel Co., Williamsport, Pa.

SPRINGS (Machinery, Railway, Spiral Steel.)

American Steel & Wire Co., Balto., Md.

—(Wire—All Kinds.)

American Steel & Wire Co., Baltimore, Md.

SPRINKLERS (Automatic Fire.)

Southern Automatic Sprinkler Co.,
Birmingham.

SPROCKETS

Diamond Chain & Mfg. Co., Indianapolis,
Ind.

STACKS (Iron and Steel.)

Birmingham Boiler and Engineering Co.,
Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chat-
tanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Downingtown Iron Works, Downingtown, Pa.
Hedges Walsh Weldner Co., Chat-
tanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
Lombard Iron Works & Supply Co., Au-
gusta, Ga.
Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
U. S. Pipe & Foundry Co., Burlington, N. J.
Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.)

Cabot, Inc., Samuel, Boston, Mass.

STAIR Steps (Safety.)

Irving Iron Works Co., Long Is. City, N. Y.

—Treads.

Central Iron & Steel Co., Harrisburg, Pa.
Byerson & Son, Inc., Jos. T., St. Louis
and New York.

STANDPIPES.

Chattanooga Boiler & Tank Co., Chat-
tanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.)

Smith & Son Co., Oscar T., Baltimore, Md.
Young & Selden Co., Baltimore, Md.

STEAM (Specialties.)

Lunkensheimer Co., The, Cincinnati, O.
Mueller Co., Decatur, Ill.

STEEL.

Bethlehem Steel Co., Bethlehem, Pa.
Central Iron & Steel Co., Harrisburg, Pa.

Dietrich Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Jones & Laughlin Steel Corp., Pitts-
burgh, Pa.
Oliver Iron & Steel Corp., Pittsburgh, Pa.
Byerson & Son, Inc., Jos. T., St. Louis
and New York.
Tennessee Coal, Iron & Railroad Co., Bir-
mingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

—(Alloy.)

Timken Roller Bearing Co., Canton, Ohio

—(Cold Rolled.)

American Steel & Wire Co., Balto., Md

—(Fabricators.)

United Welding Co., Middletown, O.

—(Special Analysis.)

Timken Roller Bearing Co., Canton, Ohio

—(Tool, High Speed.)

Bethlehem Steel Co., Bethlehem, Pa.

—Buildings (Designers and Builders.)

American Bridge Co., New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Carolina Steel & Iron Co., Greensboro, N. C.
Eichleay, Jr., Co., John, Pittsburgh, Pa.
Ingalls Iron Works Co., Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.

—Forms (Curb, Gutter, Side- walk, Road.)

Blaw-Knox Co., Pittsburgh, Pa.

—Plate Construction (Riveted or Welded.)

Birmingham Boiler & Engr. Co., Bir-
mingham, Ala.
Birmingham Tank Co., Birmingham.
Bristol Steel & Iron Works, Inc., Bris-
tol, Va.
Carolina Steel & Iron Co., Greensboro, N. C.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chat-
tanooga, Tenn.
Chicago Bridge & Iron Wks., Birmingham.
Combustion Engr. Corp., New York City.
Hedges Walsh Weldner Co., Chat-
tanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
Lancaster Iron Works, Inc., Lancaster, Pa.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Traylor Engr & Mfg. Co., Allentown, Pa.
United Welding Co., Middletown, O.

STILLS.

Alco Products, Inc., New York City.

STOKERS (Mechanical.)

Alabama Stoker & Boiler Co., Birming-
ham, Ala.
Babcock & Wilcox Co., The, New York
Combustion Engr. Corp., New York City.
Detroit Stoker Company, Detroit, Mich.

STORAGE Batteries.

Electric Storage Battery Co., Philadelphia

—Bins (Steel.)

Blaw-Knox Co., Pittsburgh, Pa.
Butler Bin Co., Waukesha, Wis.

STRINGERS (Bridge-Creosoted.)

American Creosoting Co., Louisville, Ky.

STRUCTURAL STEEL AND IRON.

American Bridge Co., New York, N. Y.
Belmont Iron Works, Philadelphia, Pa.
Bristol Steel & Iron Works, Inc., Bris-
tol, Va.
Carnegie Steel Co., Pittsburgh, Pa.
Carolina Steel & Iron Co., Greensboro, N. C.
Chattanooga Boiler & Tank Co., Chat-
tanooga, Tenn.
Converse Bridge & Steel Co., Chat-
tanooga, Tenn.
Dietrich Brothers, Baltimore, Md.
Eichleay, Jr., Co., John, Pittsburgh.
Ingalls Iron Works Co., Birmingham Ala.
Jones & Laughlin Steel Corp., Pitts-
burgh, Pa.
McClintic-Marshall Co., Pittsburgh, Pa.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.
Roanoke Iron & Bridge Works, Inc.
Roanoke, Va.
Byerson & Son, Inc., Jos. T., St. Louis
and New York.
Sines & Architectural Iron Works, Louis-
ville, Ky.
Southern Engineering Co., Charlotte, N. C.
Tennessee Coal, Iron & Railroad Co.
Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.

SULPHATE OF ALUMINA.

Grasselli Chemical Co., Inc., Birmingham

AMERICAN BRIDGE COMPANY

Subsidiary of United States Steel Corporation

Steel Structures Bridges and Buildings

GENERAL OFFICES

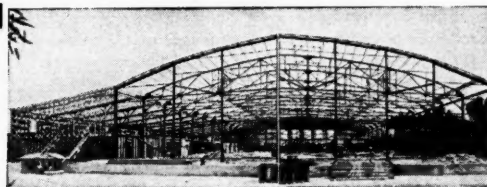
71 BROADWAY

NEW YORK

N. Y.

CONTRACTING OFFICES
IN PRINCIPAL CITIES

INGALLS SERVICE STRUCTURAL STEEL



INGALLS SERVICE

Photograph shows a packing plant being erected with Ingalls steel. Service is more than merely a hackneyed word with us. With three large manufacturing plants and modern equipment, Ingalls structural steel is on the job when you want it.

Get our prices on all kinds of structural steel work, bridges, standard steel buildings, Ingalls Truss (for fireproof floors and roof) and warehouse stocks. Then see how Ingalls Service becomes a part of every order.

The Ingalls Iron Works Company

Main Office and Plants: Birmingham, Ala.
Eastern Plant: Verona, Pa. (in Pittsburgh Dist.)
Branch Sales Offices: New York, New Orleans,
Tampa, Atlanta, Charlotte, N. C., Jackson, Miss.

... STANDARD ...
STEEL BUILDINGS

STEEL PLATE WORK

Carbon-
Chromium
"18 & 8"



Write for Recommendations!

Our chief value to you as a source of Steel Plate Work is our experience, coupled with modern facilities, excellent steel-center location, and the highly specialized character of our engineering service. Downingtown is equipped to make virtually any Shape, Tank, Shell, etc. of ordinary carbon steel, or chromium-iron-nickel alloys, with but few changes in design.

And we are equipped to fill difficult orders quickly at a competitive price. Are you on our list for your copy of the interesting house organ, DOWNINGTOWN DOINGS? Write us.

DOWNINGTOWN
Pioneers in Chrome Iron Works
Grand Office and Works: Downingtown, Pa.
New York Office: 10 Church Street

TANKS—STEEL PLATE CONSTRUCTION

Barges, Welded and Riveted Pipe, Penstocks,
Standpipes, Breechings and Stacks

OIL REFINERY and CHEMICAL EQUIPMENT

Pressure, Vacuum and Storage Tanks for All Purposes

LANCASTER IRON WORKS

Hager St., LANCASTER, PA.

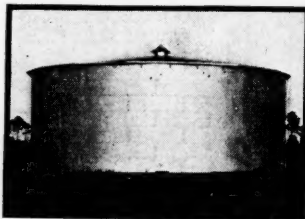
REDWOOD TANKS

ALL SIZES IN STOCK
EVERLASTING

VIRGINIA MACHINERY & WELL COMPANY, Inc.
Dept. M. R. Richmond, Va.

HORTON Steel Storage Tanks

Provide dependable and economical storage for either liquids or solids by using Horton steel tanks. Flat-bottom, elevated and cylindrical tanks in a number of standard sizes, as well as special steel plate work.



3,250,000-gallon water tank at
St. Petersburg, Fla.

CHICAGO BRIDGE & IRON WORKS

Birmingham...1530 Fifth St., North	Chicago...2108 Old Colony Bldg.
Dallas...3508 Burt Bldg.	San Francisco...1040 Bialto Bldg.
Houston...1114 Electric Bldg.	Philadelphia 2019-1616 Walnut St. Bldg.
Tulsa...2411 Exchange Bank Bldg.	Detroit...1510 Lafayette Bldg.
New York...3113 Hudson Terminal	Boston...1510 Consol. Gas Bldg.
Cleveland...2216 Midland Bank Bldg.	Seattle...4328 Smith Tower

B-194

SULPHIDE OF SODA.

Grasselli Chemical Co., Inc., Birmingham.

SULPHURIC ACID.

Davison Chemical Co., The, Balto., Md.
Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.

SUPER-HEATERS (Steam.)

Babcock & Wilcox Co., The, New York.

SURVEYS (Industrial.)

MacElwee & Crandall, Inc., Cambridge,
Mass.
Technical Service Co., New York, N. Y.

—(Quantity.)

Martin, Joe B., Charlotte, N. C.

SURVEYING INSTRUMENTS.

Weber Co., Inc., F., Philadelphia, Pa.

SWINGING ENGINES.

Dake Engine Co., Grand Haven, Mich.

SWITCHBOARDS, SWITCHES.

ETC.

General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pitts-
burgh, Pa.

SYSTEMS (Business.)

Ernst & Ernst, New York, N. Y.
May, Inc., Geo. S., Chicago, Ill.

TANKS (Air Compressor.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.
Titusville Iron Works Co., Titusville, Pa.

—(Elevated Steel.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chatta-
nooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham.

Cole Mfg. Co., R. D., Newnan, Ga.

Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Elevated Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

—(Iron and Steel.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.

American Bridge Co., New York, N. Y.

Birmingham Tank Co., Birmingham, Ala.

Chattanooga Boiler & Tank Co., Chatta-
nooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham.

Cole Mfg. Co., R. D., Newnan, Ga.

Downingtown Iron Works, Downingtown, Pa.

Lancaster Iron Works, Inc., Lancaster, Pa.

Lombard Iron Works & Supply Co., Augu-
sta, Ga.

McClintic-Marshall Co., Pittsburgh, Pa.

Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

Titusville Iron Works Co., Titusville, Pa.

Virginia Bridge & Iron Co., Roanoke, Va.

Westinghouse Traction Brake Co., Wil-
merding, Pa.

—Mixing.

Alco Products, Inc., New York, N. Y.

—(Pressure.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.

Newport News Shipbuilding & Dry Dock
Co., Newport News, Va.

—(Seamless Steel.)

Air-Tight Steel Tank Co., Pittsburgh, Pa.

National Tube Co., Pittsburgh, Pa.

—(Storage, Oil, etc.)

Biggs Boiler Works, Akron, Ohio.

Birmingham Boiler & Engr. Co., Bir-
mingham, Ala.

Chattanooga Boiler & Tank Co., Chatta-
nooga, Tenn.

Chicago Bridge & Iron Wks., Birmingham.

Downingtown Iron Works, Downingtown, Pa.

Ingalls Iron Works Co., Birmingham, Ala.

Pittsburgh-Des Moines Steel Co., Pitts-
burgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

United Welding Co., Middletown, O.

—(Welded.)

Welded Products Co. of La., Inc., New
Orleans, La.

—(Wood.)

Caldwell Co., Inc., W. E., Louisville, Ky.

Davis & Son, G. M., Palatka, Fla.

Virginia Mch. & Well Co., Richmond, Va.

TAPE (Measuring.)

Lufkin Rule Co., Saginaw, Mich.

TARPAULINS.

Fulton Bag & Cotton Mills, Atlanta, Ga.

TAX SPECIALISTS.

Ernst & Ernst, New York, N. Y.

TELEPHONE SERVICE.

American Telephone & Telegraph Co.

TENTS

Fulton Bag & Cotton Mills, Atlanta, Ga.

TEXTILE CHEMICALS.

Grasselli Chemical Co., Inc., Birmingham.

TIES (Creosoted.)

American Creosoting Co., Louisville, Ky.

TILE (Cement Roofing.)

Federal-American Cement Tile Co., Chicago.

—(Cork Composition.)

Congoleum-Nairn, Inc., Kearny, N. J.

—(Cork Flooring.)

Congoleum-Nairn, Inc., Kearny, N. J.

United Cork Companies, Lyndhurst, N. J.

—(Floor.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Roof.)

Hood Co., B. Mifflin, Daisy, Tenn.

—(Sewer.)

Lee Clay Products Co., Clearfield, Ky.

TIMBER (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.

Amer. Creosoting Co., Inc., Louisville, Ky.

TIN AND TERNE PLATES.

American Sheet & Tin Plate Co., Pitts-
burgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.

Granite City Steel Co., Granite City, Ill.

Youngstown Sheet & Tube Co., Youngs-
town, Ohio.

TOBACCO MACHINERY.

Ripley Foundry & Machine Co., Ripley, O.

TOOLS (Measuring.)

Lufkin Rule Co., Saginaw, Mich.

TORCHES (Bombshell.)

Toledo Pressed Steel Co., Toledo, Ohio.

TOWERS (Electric Transmis- sion.)

American Bridge Co., New York, N. Y.

Bessemer Galvanizing Works, Birmingham.

—(Radio.)

Bessemer Galvanizing Works, Birmingham.

—(Steel and Wood.)

Chattanooga Boiler & Tank Co., Chatta-
nooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

TRACK (Portable or Permanent.)

Equipment Corp. of America, Chicago, Ill.

Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)

Atlas Car & Mfg. Co., The, Cleveland, O.

Caterpillar Tractor Co., Peoria, Ill.

Clark Tractor Co., Battle Creek, Mich.

Cleveland Tractor Co., Cleveland, Ohio.

International Harvester Co. of America,
Inc., Chicago, Ill.

—(Road.)

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Caterpillar Tractor Co., Peoria, Ill.

Cleveland Tractor Co., Cleveland, Ohio.

TRAILERS (Arch-Girder, Heavy Duty.)

Williams Co., G. H., Erie, Pa.

TEAMWAYS, (Aerial Wire Rope.)

American Steel & Wire Co., Balto., Md.

TRANSFORMERS.

General Electric Co., Schenectady, N. Y.

Westinghouse Elec. & Mfg. Co., E. Pitts-
burgh, Pa.

—(Used.)

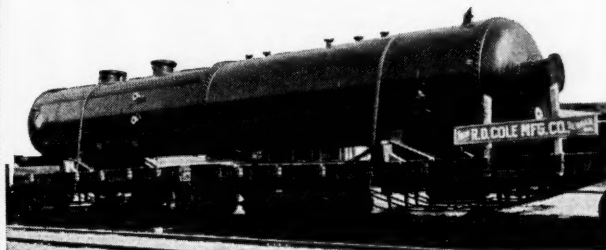
Electric Service Co., Cincinnati, O.

TRANSMISSION TOWERS (Gal- vanized.)

McClintic-Marshall Co., Pittsburgh, Pa.

TRENCH MACHINERY. See
Excavators (Trench.)**TRI-SODIUM PHOSPHATE.**
Grasselli Chemical Co., Inc., Birmingham.**TRUCK CRANES.**
Universal Crane Co., Lorain, O.**TRUCKS (Industrial.)**
Atlas Car & Mfg. Co., Inc., Cleveland, O.**—(Motor.)**
International Harvester Co., of America,
Inc., Chicago, Ill.**—(Platform, Freight, Mill, Fac-
tory, etc.)**
Clark Tractor Co., Battle Creek, Mich.**TUBES (Boiler.)** See Boiler
Tubes.**TUBING (Seamless Steel.)**
National Tube Co., Pittsburgh, Pa.
Timken Rolling Bearing Co., Canton, O.**TURBINES (Deep Well.)**
Cook, Inc., A. D., Lawrenceburg, Ind.**—(Hydraulic.)**
Newport News Shipbuilding & Dry Dock
Co., Newport News, Va.
Smith Co., S. Morgan, York, Pa.**—(Steam.)**
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
DeLaval Steam Turbine Co., Trenton, N.J.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pitts-
burgh, Pa.**TURNBUCKLES.**
Russell, Burdall & Ward Bolt & Nut
Co., Port Chester, N. Y.**TUENTABLES.**
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.**—(Portable for Meter Trucks.)**
Blaw-Knox Co., Pittsburgh, Pa.**UNIONS.**
Dart Mfg. Co., E. M., Providence, R. I.**—VALVES.**
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkensheimer Co., The, Cincinnati, Ohio.
Merco Nordstrom Valve Co., San Fran-
cisco, Cal.
Mueller Co., Decatur, Ill.
Newport News Shipbuilding & Dry Dock
Co., Newport News, Va.
Westinghouse Traction Brake Co., Wil-
merding, Pa.**—(Acid Proof.)**
Lunkensheimer Co., The, Cincinnati, Ohio.**—(Gate.)**
Ludlow Valve Mfg. Co., The, Troy, N. Y.
Lunkensheimer Co., The, Cincinnati, Ohio.
Wood & Co., B. D., Philadelphia, Pa.**VAULTS (Bank and Safe De-
posit.)**
York Safe & Lock Co., York, Penna.**VENTILATORS (Roof.)**
Merchant & Evans Co., Philadelphia, Pa.**WARDROBES (Hygienic,
School.)**
Wilson Corp., The J. G., New York.**WATCHMAN'S PORTABLE
CLOCKS.**
Davis-Paradis Watchman's Clock Corp.,
New York, N. Y.**WATERPROOFING (For Brick,
Concrete, Granite.)**
Headley Emulsified Products Co., Phila-
delphia, Pa.
Sonnenborn, Sons, Inc., L., New York.**WATER Purification.**
Becharach & Co., E. W., Kansas City,
Mo.
Roberts Filter Mfg. Co., Darby (Phila.), Pa.**—Softening Apparatus (Purify-
ing.)**
American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.**—Well Supplies.**
Cook, Inc., A. D., Lawrenceburg, Ind.**—Works Supplies and Appli-
ances.**
Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
Glamorgan Pipe & Fdry. Co., Lynchburg,
Va.
Leadite Co., Philadelphia, Pa.
Mueller Co., Decatur, Ill.
U. S. Pipe & Foundry Co., Burlington, N.J.
Wood & Co., B. D., Philadelphia, Pa.**WELDING APPARATUS (Elec-
tric Arc.)**
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pitts-
burgh, Pa.**WELL CONTRACTORS (Oil,
Artesian, etc.)**
Petersburg Mehry. Pump & Well Co.,
Petersburg, Va.
Virginia Machy. & Well Co., Richmond, Va.**WELL STRAINERS (Brass.)**
Cook, Inc., A. D., Lawrenceburg, Ind.**WHEELS AND AXLES.**
Carnegie Steel Co., Pittsburgh, Pa.**WINDOW Frames and Sash
(Metal.)**
Bayley Co., The William, Springfield, O.
Truscon Steel Co., Youngstown, Ohio.**WINDOWS (Bronze Casement.)**
Michaels Art Bronze Co., Covington, Ky.**—(Steel Basement, Casement.)**
Bayley Co., The William, Springfield, O.**—(Steel Pivoted, Screened.)**
Bayley Co., The William, Springfield, O.**—(Ventilating.)**
Bayley Co., The William, Springfield, O.**WIRE (All Kinds.)**
American Steel & Wire Co., Chicago.
Jones & Laughlin Steel Corp., Pitts-
burgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis
and New York.
Seneca Wire & Mfg. Co., Fostoria, O.**—(Barbed Wire, etc.)**
American Steel & Wire Co., Balto., Md.
Gulf States Steel Co., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngs-
town, Ohio.**—(Fence.)**
Cyclone Fence Co., Waukegan, Ill.**—(Flat and Round.)**
American Steel & Wire Co., Balto., Md.
Roebbing's Sons Co., John A., Trenton, N.J.
Seneca Wire & Mfg. Co., Fostoria, O.**—(Galvanized and Annealed.)**
Gulf States Steel Co., Birmingham, Ala.
Seneca Wire & Mfg. Co., Fostoria, Ohio.**—Cloth (Iron, Steel, Copper,
Brass, etc.)**
Harrington & King Perf. Co., Chicago.
Newark Wire Cloth Co., Newark, N.J.
Roebbing's Sons Co., John A., Trenton,
N. J.
Seneca Wire & Mfg. Co., Fostoria, O.**—Goods.**
Cyclone Fence Co., Waukegan, Ill.**—Rope (Transmission, Hoist-
ing, Haulage.)**
American Steel & Wire Co., Chicago, Ill.
Roebbing's Sons Co., John A., Trenton, N.J.**—Rope Clips.**
American Steel & Wire Co., Balto., Md.**—Stapling.**
Seneca Wire & Mfg. Co., Fostoria, O.**—(Telephone and Telegraph.)**
American Steel & Wire Co., Balto., Md.**—(Welding.)**
American Steel & Wire Co., Chicago, Ill.
Roebbing's Sons Co., John A., Trenton, N.J.
Seneca Wire & Mfg. Co., Fostoria, Ohio.**ZINC CHLORIDE.**
Grasselli Chemical Co., Inc., Birmingham.**ZINC META ARSENITE (Wood
Preservative.)**
Curtin-Howe Corp., New York City.
Gulf States Creos. Co., Hattiesburg, Miss.

◆ C O L E ◆

Tanks & Vats
for Acid StorageNH₂ Storage

Aluminum

Alloy Steels

Lead Lined

Monel Metal

Tin Lined

Boilers—HRT
and Manning

Jacketed Kettles

Agitator Tanks

Bubble Towers

Gas Scrubbers

Welded Steel Pipe

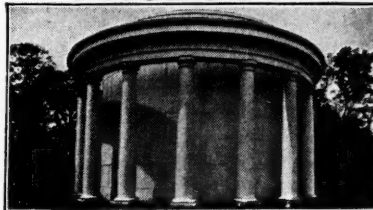
Creosoting Cylinders

◆ ◆ ◆

R. D. COLE MANUFACTURING CO.

Established 1854

NEWNAN, GA.

New York Office,
5 Beekman St.**AIR-TIGHT STEEL TANK CO.**
PITTSBURGH, PA.TANKS FOR: High pressure gas and air storage—Pneu-
matic water systems—Gasoline and oil storage—Oil burning
equipment—Open top—Welded. ATSCO Genuine Copper
Brazen Tanks for high pressure—the tightest, safest,
strongest tank it is possible to construct by any known
process. ASME code tanks.**SOUTHLAND
PRODUCTS**

Million gal. Tank at White Sulphur Springs, W. Va.

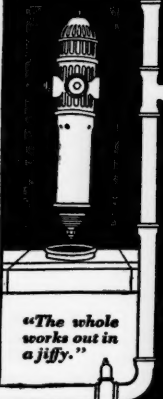
CHATTANOOGA BOILER & TANK CO.
Chattanooga, Tenn.STAND
PIPES
SMOKE
STACKS
TOWERS
AND
TANKS
STEEL
RIVETED
PIPE

MATHEWS
MODERNIZED
HYDRANT
Reg. U. S. Patent Office

Operating Nut protected from rain, snow or dirt... completely revolving head... broken hydrant cannot leak and easily replaced without digging or breaking pavement.

B. WOOD & CO.
PHILADELPHIA, PA. FOUNDED 1803

"The whole works out in a jiffy."



Mundt Perforated Metals
Any metal, any size, any perforation, for any use. Large stock available for urgent need.
43 years' experience enables us to give superior service. MUNDT'S customers are always satisfied.
CHARLES MUNDT & SONS
490 Johnston Avenue, Jersey City, N. J.



Hydraulic Presses and Pumps
FOR ALMOST EVERY KIND OF PRESSURE SERVICE

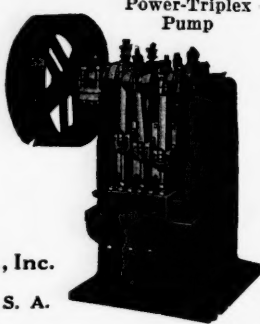
From
10 to 1000
Tons

Let us tell you more about them.

Also Knuckle Joint and Power Screw Presses, Accumulators, Valves, etc.

Dunning & Boschert Press Co., Inc.
386 West Water Street,
Syracuse, N. Y., U. S. A.
Established 1872

Power-Triplex Pump



PERFORATED METALS HEADQUARTERS
Cotton Seed Oil Works a Specialty
Send for Samples
ERDL PERFORATING CO. Rochester, N. Y.



Perforated Metal Screens for every purpose
also elevator buckets of all kinds; chutes; hoppers; stacks and tanks.
MITCO Products—Interlocked Steel Grating; Shur-Site Stair Treads; Armorgrids.
HENDRICK MANUFACTURING CO.
44 Dundaff St., Carbondale, Pa.
Offices in Principal Cities



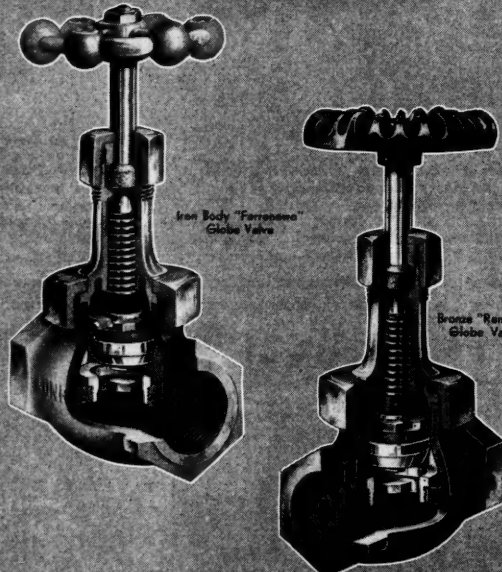
LUNKENHEIMER

Iron Body "Ferrosome" Globe Valve

Bronze "Renewo" Globe Valve

THE LUNKENHEIMER CO.
—CORP.—
CINCINNATI, OHIO, U.S.A.
NEW YORK, CHICAGO, PHOENIX, PITTSBURGH, SAN FRANCISCO, LONDON
SOLE AGENTS: AMERICAN MACHINERY CO., NEW YORK

Buy from the local Lunkenhimer Distributor



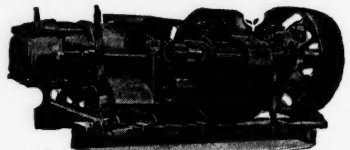
Perforated Metals SCREENS OF ALL KINDS
Chicago Perforating Co.
2445 West 24th Place
Tel. Canal 1489 CHICAGO, ILL.



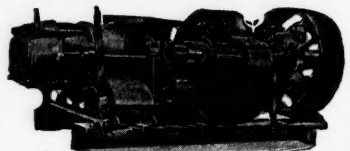
BEDFORD CRANES
Made in all capacities—overhead or Gantry—to suit individual requirements. Floor, cage, or remote control. Bedford steel stiff leg on guy derricks.
BEDFORD FOUNDRY & MACHINE CO.
1100 5th Street Bedford, Ind.



CLAY WORKING MACHINERY
For Brick, Tile and Block, from smallest to largest capacity.
Write for catalogue. Full line equipment.
J. C. STEELE & SONS
Statesville, N. C., U.S.A.



WE are the sole and only manufacturers of the machine known under the trade name and trade mark
"CEMENT GUN"
Let us aid you by giving you full information how your new construction or repair is made with this machine and its product
GUNITE
Experience Has Taught Us All Best Methods
CEMENT GUN CO., INC., Allentown, Penna.



Alphabetical Index of Advertisements

A

Adams Co., J. D.
 Adam Electric Co., Frank
 Adams Machinery Co., T. G.
 Air-Tight Steel Tank Co.
 Alabama Power Co.
 Alabama Stoker & Boiler Co.
 Albert & Davidson Pipe Corp.
 Albert Pipe Supply Co.
 Alco Products, Inc.
 Allis-Chalmers Mfg. Co.
 Alpaugh & Sons, Chas. W.
 Alpha Portland Cement Corp.
 American Bridge Co.
 American Cast Iron Pipe Co.
 American Creosote Works Inc.
 American Creosoting Co.
 American Elevator & Machine Co.
 American Gas Association
 American Limestone Co.
 American Pipe Bending Machine Co.
 American Rolling Mill Co.
 American Sheet & Tin Plate Co.
 American Steel & Wire Co.
 American Telephone & Telegraph Co.
 American Water Softener Co.
 American Well Works
 Anderson, J. W.
 Andrews Co., A. H.
 Armstrong Cork & Insulation Co.
 Arundel Corporation
 Associated Gas & Electric System
 Atlanta & West Point Railroad
 Atlantic Creosoting Co.
 Atlantic, Gulf & Pacific Co.
 Atlas Car and Manufacturing Co.
 Audit Company of the South
 Austin-Western Road Machinery Co.
 Ayer & Lord Tie Co.

B

Babcock & Wilcox Co.
 Bacharach & Co., E. W.
 Baltimore Commercial Bank
 Baltimore Trust Co.
 Bank of New York & Trust Co.
 Bannon Pipe Co.
 Barber Asphalt Co.
 Barber-Greene Co.
 Barrow-Agee Laboratories
 Barstow & Co., W. S.
 Bay City Shovels, Inc.
 Bedford Foundry & Machine Co.
 Belmont Iron Works
 Bessemer Galvanizing Works
 Bethlehem Steel Co.
 Birmingham Boiler & Engr. Co.
 Birmingham Galvanizing Co.
 Birmingham Tank Co.
 Blackburn, Jr. R. J.
 Blair, Algernon
 Blaw-Knox Co.
 Bliss Co., E. W.
 Blystone Mfg. Co.
 Boxley & Co., W. W.
 Bristol Steel & Iron Works, Inc.
 Brown & Co.
 Brown Wood Preserving Co.
 Bucyrus-Erie Co.
 Buffalo-Springfield Roller Co.
 Burkes, J. V. & R. T.
 Butler Bin Co.
 Byllesby Engineering & Management Corp.

C

Cabot, Inc., Samuel
 Caldwell Co., W. E.
 Carborundum Co.

D

Dake Engine Co.
 Danville (Va.) City of
 Dart Mfg. Co., E. M.
 Davis & Son, G. M.
 Davis-Paradis Watchman's Clock Corp.
 Davison Chemical Co.
 Day Pulverizer Co.
 DeKalb, Courtenay
 DeLaval Steam Turbine Co.
 Delaware Registration Trust Co.
 Detroit Stoker Co.
 Diamond Chain & Mfg. Co.
 Diamond Iron Works
 Dickinson & Co., J. Q.
 Dietrich Brothers
 Dixon Crucible Co., Jos.
 Dow & Smith
 Downtown Iron Works
 Dunning & Boschert Press Co.
 DuPont de Nemours & Co., E. I.

E

Earle Gear & Machine Co.
 Eichleay, Jr., Co., John
 Electric Bond & Share Co.
 Electric Service Co.
 Electric Storage Battery Co.
 Engineering Service Corp.
 Eppinger & Russell Co.
 Equipment Corp. of America
 Erie Perforating Co.
 Erie Machine Shops
 Erie Pump & Engine Works
 Ernst & Ernst

F

Fairbanks, Morse & Co.
 Fairfield Engineering Co.

G

Galveston, Texas, City of
 Galveston Wharf Co.
 Gardner & Howe
 Gay & Co., W. O.
 General Electric Co.
 General Machine Works
 Georgia Creosoting Co.
 Georgia Iron Works
 Georgia Marble Co.
 Georgia Power Co.
 Georgia Sand & Gravel Co.
 Glamorgan Pipe & Fdry. Co.
 Goder, Joseph
 Goldens' Foundry & Machine Co.
 Granite City Steel Co.
 Grasselli Chemical Co.
 Greenpoint Iron & Pipe Co.
 Greenspon's Sons Co., Jos.
 Greiner & Co., J. E.
 Gridley Constr. Co., Lee A.
 Gulf Refining Co.
 Gulf States Creosoting Co.
 Gulf States Steel Co.
 Gunite Concrete & Constr. Co.
 Gunite Construction Co.

K

Kansas City Bridge Co.
 Kennedy-Riegger Drilling Co.
 Kerlow Steel Flooring Co.
 King, Philip T.
 Kirby Lumber Co.
 Knowles, Morris, Inc.
 Knoxville Iron Co.

L

LaBour Co., Inc.
 Lancaster Iron Works
 Law & Co., A. M.
 Layne & Bowler, Inc.
 Leadite Co.
 Lee Clay Products Co.
 Lee, William S.
 Lewis & Co., Henry
 Lima Excavator Sales Agency
 Lockwood Greene Engrs., Inc.
 Lombard Iron Works & Supply Co.
 Lookout Boiler & Mfg. Co.
 Ludlow Valve Mfg. Co.
 Lufkin Rule Co.
 Lunkenheimer Co.

H

Haas Pattern Co., A. W.
 Hanchett Bond Co.
 Hancock Co.
 Hardaway Contracting Co.
 Harnischfeger Corp.
 Harrington & King Perforating Co.
 Harris, G. A.
 Harub Engr. Co., C. N.
 Harris Co., B. W. & Leo
 Harza Engineering Co.
 Headley Emulsified Products Co.
 Heath Co., J. S.
 Hedges Walsh Weldner Co.
 Heiss Hotel
 Hendrick Mfg. Co.
 Hill & Griffith Co.
 Hills Co., George B.
 Hires Turner Glass Co.
 Hobbs, Inc., Lewter F.
 Holt Hardwood Co.
 Honhorst Co., Jos.
 Hood Co., B. Mifflin
 Hoosier Engineering Co.
 Hornbuckle Contracting Co.
 Huber Manufacturing Co.
 Hudson Pipe & Supply Co.
 Huey, S. E.
 Hunt Co., Robert W.
 Hunt's Sons Co., M. J.
 Hyman-Michaels Co.

I

Industrial Brownhoist Corp.
 Ingalls Iron Works Co.
 International Filter Co.
 International Harvester Co. of America
 Irving Iron Works Co.

J

Jackson Lumber Co.
 Jaeger Machine Co.
 Jefferson Foundry Co.
 Jones & Laughlin Steel Corp.

M

MacElwee & Crandall, Inc.
 Main, Inc. Chas. T.
 Manhattan Perforated Metal Co.
 Manistee Iron Works Co.
 Marine Metal & Supply Co.
 Martin, Joe B.
 May Inc., George S.
 McClintic-Marshall Co.
 McCrary Co., J. B.
 Meigs, Bassett & Slaughter
 Merchant & Evans Co.
 Merco Nordstrom Valve Co.
 Michaels Art Bronze Co.
 Milburn, Heister & Co.
 Millner Co.
 Model Land Co. (Flagler System)
 Moon Track Co.
 Moore Dry Kiln Co.
 Moss, Jr., W. Wade
 Mott Core Drilling Co.
 Mountain State Steel Foundries
 Moyer Co., Tilghman
 Mueller Co.
 Mundt & Sons, Chas.
 Myers & Bro. Co., F. E.
 Myers & Sons, J. L.

N

Nashville Ind. Corp.
 National Cast Iron Pipe Co.
 National Equipment Corp.
 National Paving Brick Mfrs. Assn.
 National Traffic Guard Co.
 National Tube Co.
 Newark Wire Cloth Co.
 Newport News Shipbuilding & Dry Dock Co.
 Niagara Blower Co.
 Norfolk and Western Railway
 Northwestern Chimney Construction Co.
 Northwest Engineering Co.
 Nuveen & Co., John

O		P		Q		R		S		T		U		V		W		Y		Z	
O'Brien Mchry. Co., The	77	Pacific Flush-Tank Co.	87	Quincy Compressor Co.	83	Randle Mchry. Co., The	*	Ripley Fdry. & Machine Co.	†	Table of Contents	25	U. S. Pipe & Foundry Co.	†	Virginia Bridge & Iron Co.	15	Walker Electrical Co.	20	Yoder Co., The	†	Zelnicker in St. Louis	78
Ohio Power Shovel Co.	†	Palmer Asbestos & Rubber Corp.	†	Quinn Wire & Iron Works	90	Raymond Bros. Impact Pulv. Co.	19	Roanoke Iron & Bridge Works	92	Taylor Forge & Pipe Works	†	United Cork Companies	†	Virginia Engineering Co.	20	Warner Service Co.	20	York Safe & Lock Co.	†		
Oklahoma City Chamber of Commerce	†	Parkersburg, W. Va. Board of Commerce	†			Reading Iron Co.	†	Roberts Filter Mfg. Co.	87	Tennessee Central Railway	†	United Engineers & Constr., Inc.	†	Virginia Machinery & Well Co.	94	Webb Electric Co.	20	Young & Selden Co.	†		
Old Dominion Box Co., Inc.	†	Pennsylvania Drilling Co.	22			Reale Dept.	76 to 78	Robins & Co., A. K.	†	Tennessee Coal, Iron & Railroad Co.	16	Universal Crane Co., The	†			Weber Co., F.	†	Youngstown Sheet & Tube Co.	13		
Oliver Iron & Steel Corp.	69	Perry, Buxton, Doane Co.	78			Reynolds Brothers Lumber Co.	†	Robinson & Orr	78	Texaco Power & Light Co.	†	Universal Crusher Co.	†			Welded Products Co. of La., Inc.	†				
Owen Bucket Co., The	79	Petersburg Machinery Pump & Well Co.	91			Richmond Foundry & Mfg. Co.	87	Roebling's Sons Co., John A.	†	Thew Shovel Co., The	†					Western Electric Co.	9				
Owensboro Sewer Pipe Co.	90	Phoenix Iron Co., The	92					Ruberoide Co.	†	Thompson & Bros., T. C.	20					Westinghouse Electric & Mfg. Co.	†				
		Picard Laboratories	21					Rundie-Spence Mfg. Co.	†	Timken Roller Bearing Co.	100					Westinghouse Lamp Co.	†				
		Pipe Railing Construction Co.	91					Russell, Burdsall & Ward Bolt & Nut Co.	†	Titusville Iron Works Co.	†					Westinghouse Traction Brake Co.	6				
		Pisgah Mills	77					Rust Engineering Co.	85-89	Toledo Pressed Steel Co.	79					Wheeler, Walter H.	20				
		Pittsburgh-Des Moines Steel Co.	†					Ryerson & Son, Inc., Jos. T.	†	Trackson Co.	†					Whitaker Paper Co.	†				
		Pittsburgh Piping & Equip. Co.	98							Traylor Engineering & Mfg. Co.	69					White Co., Gilbert C.	20				
		Pittsburgh Plate Glass Co.	99							Truscon Steel Co.	†					White Engineering Corp., J. G.	21				
		Pittsburgh Testing Laboratory	22							Tucker & Laxton	21					Whiting & Co., Inc., P. H.	†				
		Poe Piping & Heating Co.	20							Turner, C. A. P.	20					Whitman, Requaardt & Smith	20				
		Porter Co., H. K.	†												Whitney Metal Tool Co.	†					
		Power Piping Co.	90												Wiedeman and Singleton, Inc.	21					
		Preacher & Co., Inc., G. Lloyd	20												Wiley & Wilson	21					
		Progressive Mfg. Co., The	†												Williams Company, G. H.	79					
		Proposal Advertisements	73 to 74												Wilson Corp., J. G.	†					
		Provident Savings Bank & Trust Co.	71												Wood & Co., R. D.	96					
															Woodhouse Chain Works	†					
															Woodstock Slag Corp.	80					
															Wright Mfg. Co.	†					

Advs. marked † not in this issue.
Advs. marked ‡ appear in first issue of month.
Advs. marked * appear every other week.

Classified Opportunities } Page 75-76

Proposal Advertisements } Pages 73-74

Resale Department } Pages 76 to 78

11-6-30

Strength and Reliability

essential in piping systems.
may be obtained by specifying

Pittsburgh Piping.

FOR more than a quarter of a century the Pittsburgh Piping & Equipment Company have been manufacturing, fabricating and installing High and Low Pressure Piping, and within the past several years have accomplished the completion of piping requirements for many of the Modern Super-Power Stations now operating.

Pittsburgh Piping & Equipment Co.

Specialists in Welded Wrought Steel Headers, Flanged Iron and Steel Fittings,
Pipe Bends and Fabricated Piping for Power Plants.

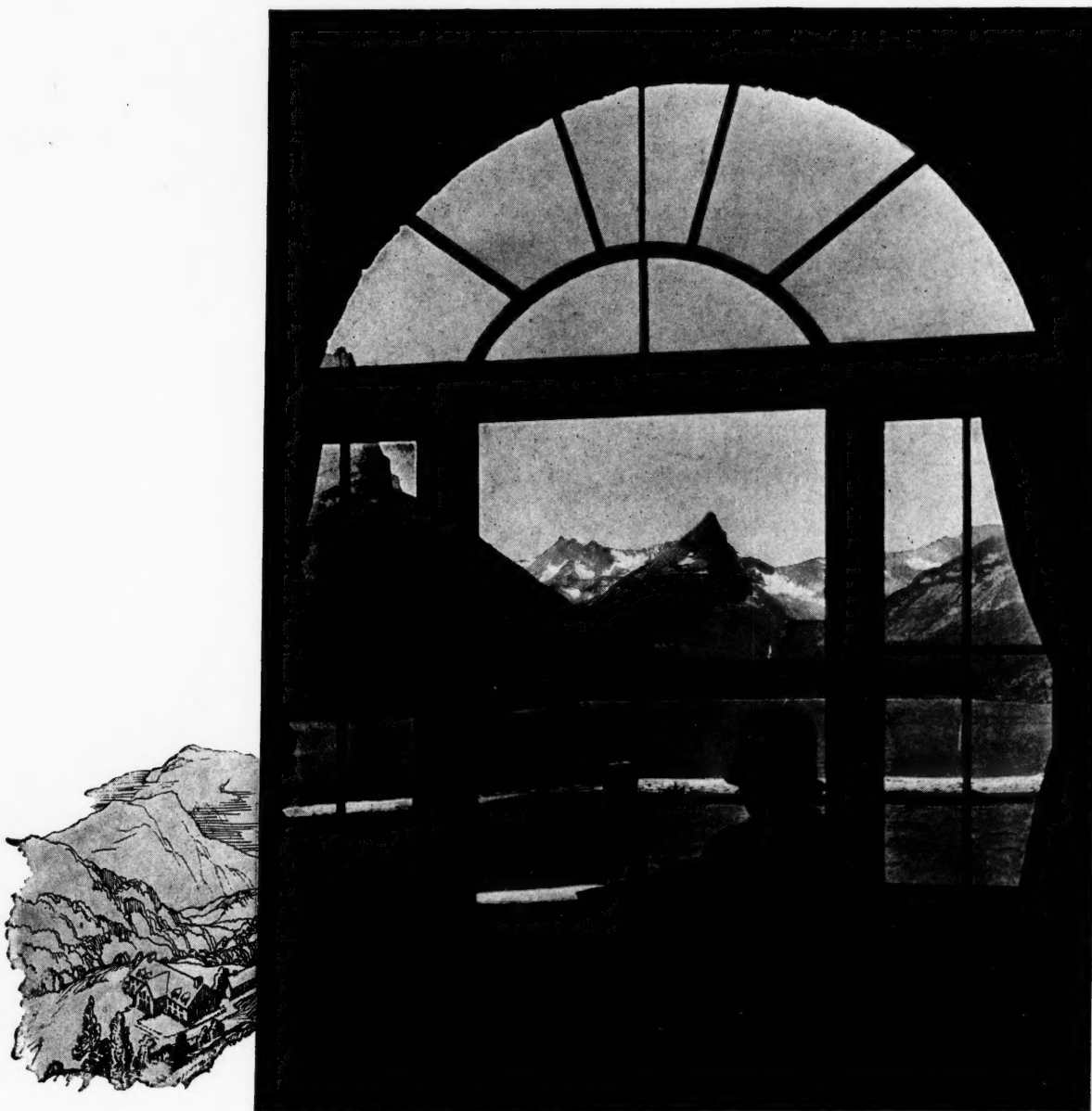
Pittsburgh, Pa.

DISTRICT OFFICES:

New York 220 Broadway
Chicago Peoples Gas Bldg.
Cleveland Ulmer Bldg.
Indianapolis Occidental Bldg.
Detroit General Motors Bldg.
Houghton, Mich. Dea Bldg.
Boston 10 High St.



THE LAST WORD IN PIPING FOR POWER PLANTS.



You'll have NO TROUBLE *getting* PENNVERNON

PENNVERNON Window Glass is unique—in two ways. First, because of its quality. Due to our new process by which Pennvernon is manufactured, it has a new flatness, clearness of vision and brilliancy. A remarkable freedom from flaws and defects. And yet it costs no more than ordinary window glass.

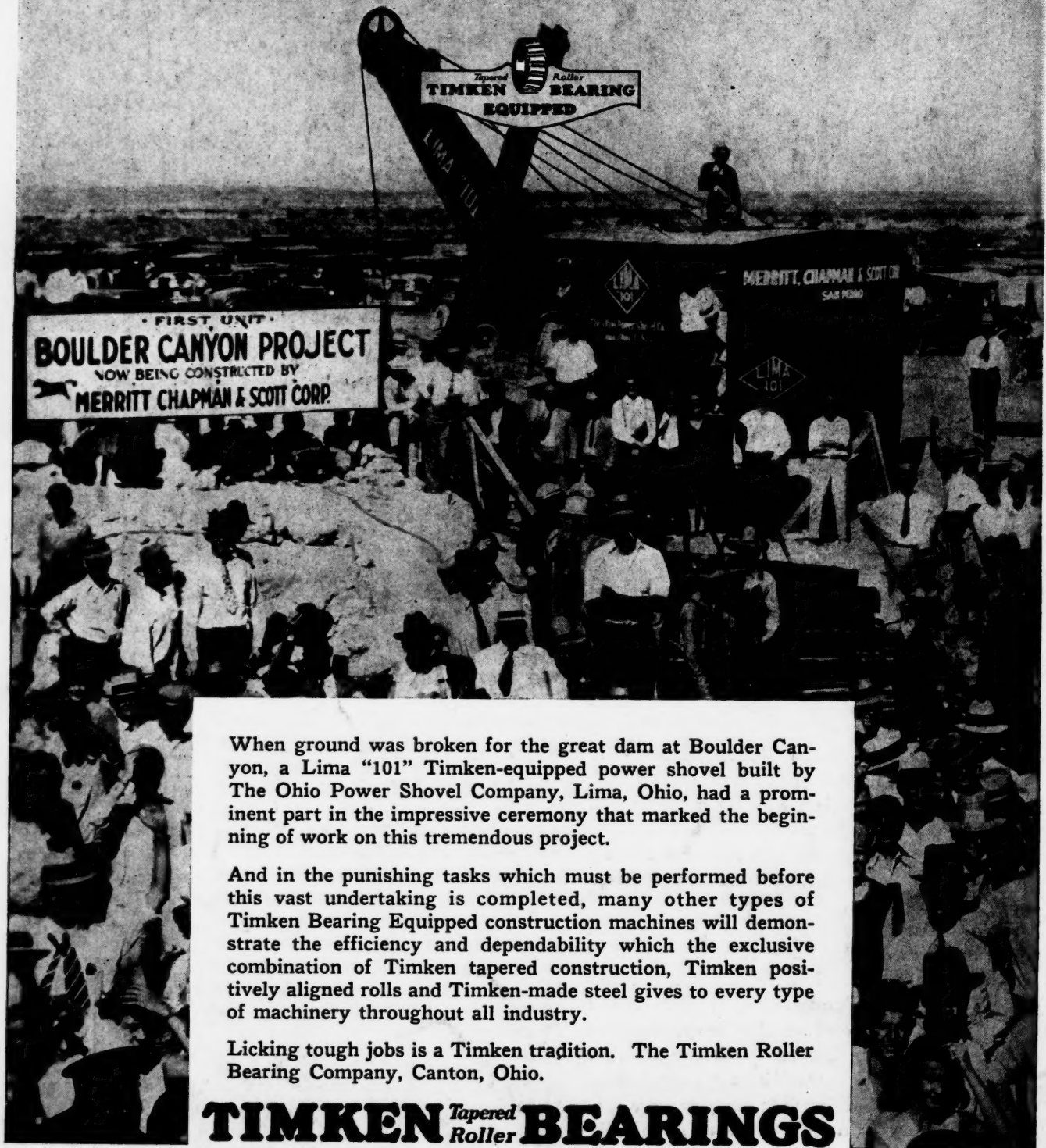
Second, Pennvernon is unique in that it is more readily available than any other window glass. Manufactured by the Pittsburgh Plate Glass Company, Pennvernon is distributed through the same vast warehouse system that handles the other famous products of this company. Sixty-five warehouses have Pennvernon Window Glass ready for you—a warehouse in every principal city and each fully

equipped to render prompt, satisfactory service. In addition, this flatter, clearer glass is available at all leading glass jobbers.

Get to know Pennvernon. Write us for samples—large or small—and examine them. We will send you, too, upon request, our special booklet on Pennvernon manufacture. Address Pittsburgh Plate Glass Co., Grant Building, Pittsburgh, Pa.

Pennvernon
flat drawn
WINDOW GLASS

A Lima "101" Power Shovel equipped with 58 Timken Bearings goes to work on the Boulder Dam



When ground was broken for the great dam at Boulder Canyon, a Lima "101" Timken-equipped power shovel built by The Ohio Power Shovel Company, Lima, Ohio, had a prominent part in the impressive ceremony that marked the beginning of work on this tremendous project.

And in the punishing tasks which must be performed before this vast undertaking is completed, many other types of Timken Bearing Equipped construction machines will demonstrate the efficiency and dependability which the exclusive combination of Timken tapered construction, Timken positively aligned rolls and Timken-made steel gives to every type of machinery throughout all industry.

Licking tough jobs is a Timken tradition. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

